2023

BEKAMAK

sawing machines

USERS MANUAL

DOUBLE MITRE SEMI-AUTOMATIC HORIZONTAL BANDSAWING MACHINES

CE

OPERATION POWER
400 V

SERIAL NUMBER

Distributed By:

HARE&FORBES MACHINERYHOUSE

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Warranty

- The firm warrants that the machinery described here has been designed according to the law, especially to the safety and health regulations. The machinery has successfully passed the quality control.
- The warranty is valid for a period of 12 months. It does not cover electric motors and instruments.
- The consumables and bands are not included in the warrant.
- The consumer has the right to change faulty manufactured parts without any charges. The consumer is responsible for the transportation and packaging.
- The warranty does not cover any part injuries resulting from misusage, falling off or inappropriate maintenance conditions.
- Any changes on the machinery and especially on the safety apparatus without approval terminates the warranty and exempts the manufacturer from any responsibilities.
- The problems originate from storing the machinery under inappropriate storage conditions is not covered by the warranty.

The serial number on the machinery is the basic reference for the warranty, instruction manual, after-sales service, and identification of the machinery in case of need.

Important

After delivery of the machinery, the consumer should make sure that all safety apparatuses are present and work properly. All the parts that had not been assembled in the factory for facilitated transportation should be assembled carefully according to the instructions.

Those information should be provided when ordering spare parts.

- The model of machinery.
- The serial number, and year of manufacture.
- Reference code of the part.

<u>Technical support is not provided for the machineries without serial number.</u>

General Information

- The machinery has been properly manufactured in accordance with the accident prevention rules in the law.
- Please follow the instructions in this manual for the best performance. Utilization of the machinery in accordance with the relevant instructions does not only provide the best performance but also prevents the drawbacks resulting from inappropriate usage.
- Please read this manual carefully not to contact the manufacturer for problems which can be simply solved.
- If the consumer needs our technical support even after carefully applying the instructions in this manual, technical information necessary to determine the problem and/or which parts do not work properly should be provided. That technical support will help our service intervene the machinery efficiently and fast.
- If necessary, a copy of the instruction manual might be requested by providing the serial number of machinery.

Important: **Before operating the machinery, please make sure that the technician has understood the instructions well and follows the instructions below.**

Warning

The manufacturer is not responsible for the injuries resulting from operation of the machinery inconsistent with its intended use, and improper use of the machinery. In addition, the manufacturer is not responsible for the injuries and damages arising from use of the machinery inconsistent with the following rules.

A) Please take the necessary precautions to avoid operation of the machinery by unauthorized persons during adjustment of the loading, changing parts, cleaning, renovation and/or maintenance.
B) Please do not make any change on the safety apparatus and shield over the machinery.
C) Please do not remove any safety apparatus and shield over the machinery.
D) Please do not operate the machinery unless the safety apparatus and shields that had been removed because of technical issues are reassembled.
E) The machinery has been designated to operate in closed areas. It is not recommended to operate the machinery indoor.

Safety İnstructions

- Be sure that electrical connection is made carefully. To avoid unwanted situations like electrical shock, protect the main supply cable with a holster.
- Before running the machine, be sure that all of the protections are mounted properly and all the covers are closed.
- Avoid from smoke and moisture.
- Please use the parts and equipment's which are recommended. Usage of unsuitable parts and materials which are bigger than the capacity of the machine can cause unwanted situations.
- Check the machine and inform the defects every day.
- Don't leave any material after chancing the band.
- Do not hold the material while the machine is cutting. Always tighten the material by using essential parts.
- Please pay attention to choose the area of the machine which doesn't include anything that creates difficulties to control the machine
- Please be sure that the teeth of the band are looking to correct direction.

- Don't leave the band on the ground or any place that is dangerous for other people.
- Be careful when using the machine and keep the working area clean (clean the saw dusts and oil traces)
- Pay attention to security instructions when using the machine.
- Don't wear loose cloths when using the machine.
- Regardless use the protective gloves when using the machine.
- Don't get close too much to the machine when running.
- Before carrying out any cleaning or maintenance procedure, disconnect the machine from main supply.
- İn some conditions, noise level can be about 80 db. Band choice and cutting speed is important factor for noise level.
- İllumination is an important factor for security.
- Ratio of coolant liquid is important for obtaining optimum lubrication.
- Never use the machine if you notice any fault of the machine or absence of any part of the machine.

- Control the emergency button at least once a week and be sure that it is working properly.

Definitions

(EN ISO 12100:2010)

User: the person, body or company who has bought or rented the machine and intends to employ it for the uses contemplated.

Operator: the physical person authorized by the user to operate the machine after having been suitable trained on the use and specific risks of the machine..

Authorized person: the skilled person, who is authorized by the user to carry out maintenance or setting-up operation of the machine.

Dangerous zone: anywhere inside and/or near a machine, which the presence of an exposed person represents a risk for his safety and health.

Exposed person: any person who finds himself in dangerous zone, either entirely or partially

Purpose of machine

This machine has been designed to be mainly used by light and medium structural steel industries.

This machine has been designed for the cutting of ferrous material and the other light materials with solid, hollow or cross section.

Any other material use differing from the above-mentioned materials is to be considered inappropriate and prohibited.

The machine operator must be trained and informed of risks and must have the instruction manual at his disposal.

The operator must not work in the vicinity of the danger zone (cutting area) with any other people.

During the cutting process, the operator must never put hands or use tools in the cutting area

Purpose of Usage

This machine is designed to cut cold metals in part by using the saw blade.Improper use of the machine will damage the machine.

Cleaning the protective coating

Before the machine is packaged,all external metal surfaces are coated with anti-corrosion agent.This coating must be cleaned before operating the machine.In order to this,please do not use a scraper or a sandpaper.With using a cloth,this coating can be cleaned and to clean totally,the gas oil impregnated cotton yarn waste can be used.Then,all surfaces of the machine should be wiped completely with a dry cloth and at the end,the machine oil sould be wiped all surfaces of the machine.(except the painted surfaces)

Prohibited Applications:

Restrictions on the use of the machine are stated in the user manual and these must be considered.In particular,please be careful with the following points below;

The machine is not designed for use in flammable,explosive enviroments and outdoors.

Cutting of non-cold metal materials is not suitable for this machine.

Please take the necessary precautions to avoid operation of the machinery by unauthorized persons during adjustment of the loading, changing parts, cleaning, renovation and/or maintenance.

The machine is for the professional use and please do not operate the machine in public area and only authorized persons should operate the machine.

Meanings of the Safety Signs Used on the Machinery	
 Caution	 Danger of cutting off hands at saw blade
 High voltage danger	 Danger of pressing hands at rotating components
 Danger of crushing by pressing	
 Danger of pressing hands at conveyor	
 Danger of pressing hands at belt-pulley	

Prohibited Applications

Restrictions about operation of the machinery has been defined in the instruction manual. You should pay attention to those restrictions, especially the following matters.

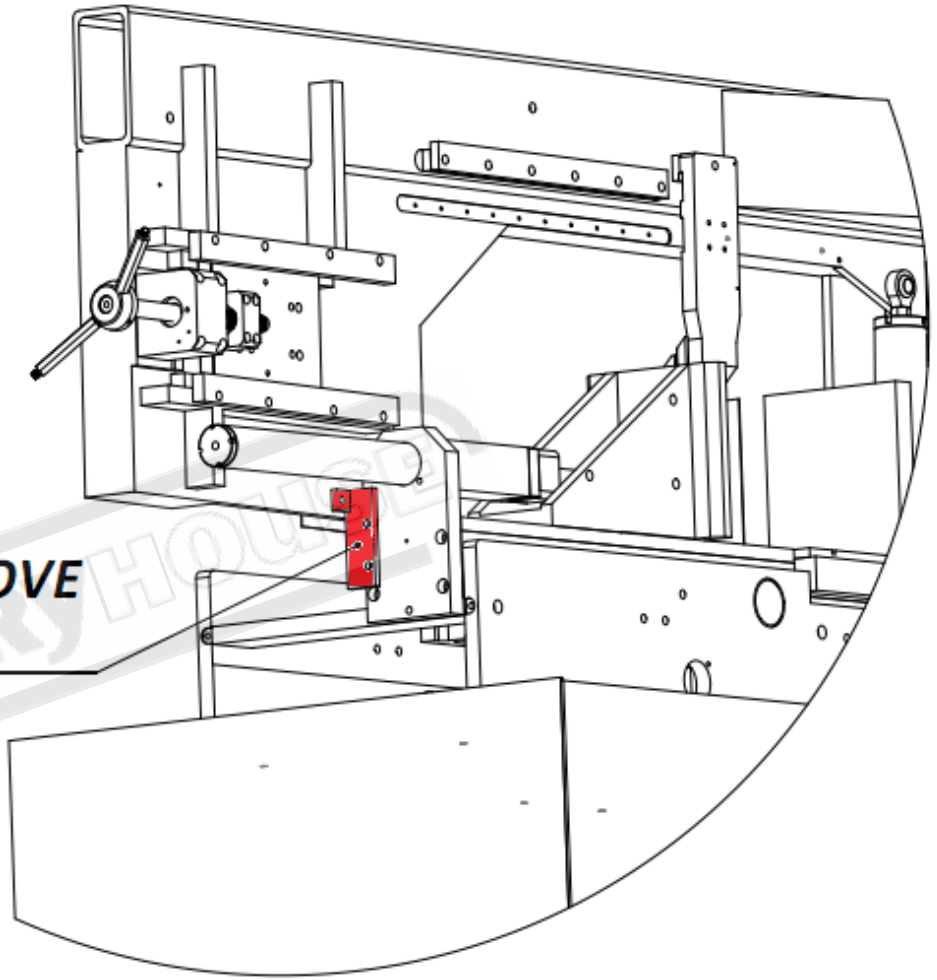
The machinery **has not been designed to** operate in flammable or explosive environments, and indoor.

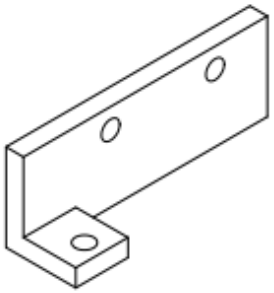
Sawing the materials expect for cold metals **is not suitable**.

All procedures of the machinery including assembly, maintenance, cleaning, renovation etc. should be performed by an authorized and qualified staff. The machinery is intended for professional use. It **should not be operated** in public areas and other areas where unauthorized people might reach.

IMPORTANT: Hydraulic and reducer oil should be changed 3 months after operation of the machinery. Please do not add on the former oil. You should completely drain the oil and then add the new.

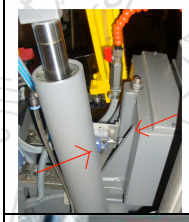
PLEASE DO NOT CONNECT TO THE POWER OR RUN THE MACHINE UNLESS YOU REMOVE THIS ORANGE PART.





THIS PART IS TO KEEP THE MACHINE HEAD IN SAFE DURING TRANSPORTATION

Residual Risks		
Do Not Touch Below Mentioned Moving Or Movable Parts Of The Machine While İt Runs.		
	Mechanical Dangers	**Residual Risks**
	There might be hand/arm jam and crushing between the wheel cover and control panel.	Downfeed speed is designed to be less than 10mm/s. There are the warnings in manual and on machine.
	There might be finger jamming between the piston shaft and block.	. Piston closing time is designed to be less than 10mm/s. To reduce the probability of piston jams wedge is designed to be substantially close to the plunger shaft diameter. . There is warning label.
	. There is hand jam possibility between the lower swich and vice plate.	Downfeed stops when the switch touches the screw. When there is finger jam the swich will be pressed and the movement will stop.In this way movement stops without harm.
	The swich which limits the downfeed presses on the plate, there is finger jam risk.	Downfeed speed is adjusted to less than 10mm/s, which helps running away faster.
	There is hand jam possibility between the upper swich and bow head.	Downfeed speed is adjusted to less than 10mm/s, which helps running away faster.
	There is jam possibility when you put your finger to the chip brush.	Brushes to provide sufficient clearance in accordance with EN 294 was closed by the stationary casing. There are warning at related sections.
	When the vice is max open there is possiblity to jam the hand between piston connection plate and the vice.	The clamping vice pistons work with push-start command.

	When the machine goes to mitre , possiblity for hand jam between the fixed part and movable part.	There are warnings in user manuals. There are warning signs on the machines.
	When the bow approaches down the gap between the piston and vice closes. Finger jam warning.	There are warnings in user manuals. There are warning signs on the machines.
	When the bow goes up the gap between the movable part and vice plates closes. Finger jam warning.	There are warnings in user manuals. There are warning signs on the machines.
	Gap under the cover may let get to the blade.	The chip exit hole under the cover is narrowed according to EN294 for protection.(check calculation part)
 .	There is possibility to get to the out of cutting part of the blade from front and back.	There are warnings in user manuals. There are warning signs on the machines.
	Warning for the end of chip conveyor which may cause jamming.	There are warnings in user manuals. There are warning signs on the machines.
	Warning for jamming from the chip conveyor grid to chip conveyor.	There are warnings in user manuals. There are warning signs on the machines.
	Warning for reaching to the chain under the chain cover.	Under the cover is closed to prevent reaching to the chain.
	Warning for finger jamming between the roller and materail.	Feeding mechanism cover is designed to prevent jamming. There are warning signs on the machines.

Statement of Noise

Conditions for measurement

Tested Machine: BMSY 440 DGH

Blade size: 5200 x 34 x 1,1mm

Material in use: ø440 Solid Material

A Nominal sound pressure level in warehouse

Lpfa,1m=77dB(A) Coefficient of uncertainty k:4 db (testing appropriate to en 11202)

A nominal sound power level

Power level lwa=95dB(A) (mesaured value)

Coefficient of uncertainty k:4 db (testing appropriate to en iso 3746)

Values for noise are level of issue and it doesn't state it's on safe working level.

Even there is a connection betweeen İssue and exposure levels,

this can not be used safely to decide if advanced precautions are needed.

Factors that effect the real level of exposure that effects work force are depending on featuress of warehouse,

(other sourses of noise, other works nearby, and quantity of machines) including exposure time

Allowed level of exposure may change from country to another.

Beside these, this information lets the operator to consider the dangers and risks.

Warning

This chapter outlining the safety devices and norms was drawn up bearing in mind the normal use of the machine as stated in the chapter on the operation of the machine and the adequate preparation of the operators as regards the specific risks linked to the operation of the machine.

İf the machine isn't used according to instruction given in the 'purpose of the machine' chapter in this manual, the manufacturer isn't responsible for any damage caused to people and things.

Furthermore, the manufacturer isn't responsible for any damage to people and things and things resulting from the non-compliance with the following warnings.

A) Adopt all the necessary precautions during loading, calibration, part replacement, cleaning, and repair or maintenance operations to prevent someone else from turning the machine on.

B) Do not temper with the safety devices and guards on the machine.

C) Do not remove any of the safety devices and guards on the machine.

Always make sure that safety devices and guards are remounted after their temporary removal for technical reasons ordered by the boss

Connection To The Electrical System

Control panel is mounted on the electric panel. Machine is connected to the main supply in the electrical panel. **R, s and t shows the phases**, **n is** neuter and **pe is grounding**. Connection will be from the 13(I1) klemens which is at right klemens group.

Check the voltage which is mentioned at the first page of the manuel before setting the electrical connection of the machine.

İf the cable phase line is correct phase controlled lightens in that way it is prevented to motors move on wrong ways. Be sure that the out-put voltage at the power supply is 22 ~ 28 vdc.

The machine is protected against short circuit with interrupters and against high voltage with thermal relays. Grounding and neutralizing have to be done to protect the machine .

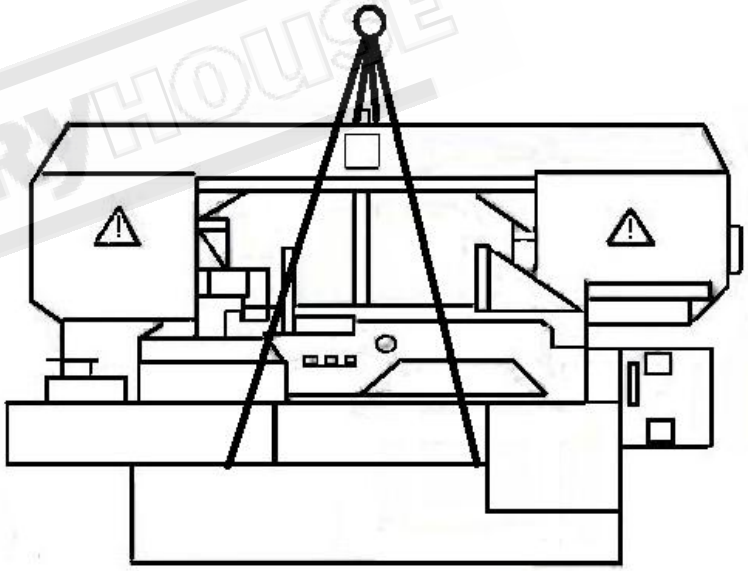
TECNICAL DATA/TECHNISCE DATEN			BMSY 440DGH
Cutting Capacity Schnittbereich 0°	Round/Rund	mm	440
	Flat/Flach	mm	610 x 440
	Square/Vierkant	mm	440
Cutting Capacity Schnittbereich +30°	Round/Rund	mm	440
	Flat/Flach	mm	500 x 440
	Square/Vierkant	mm	440
Cutting Capacity Schnittbereich +45°	Round/Rund	mm	410
	Flat/Flach	mm	410 x 440
	Square/Vierkant	mm	410
Cutting Capacity Schnittbereich +60°	Round/Rund	mm	320
	Flat/Flach	mm	250 x 440
	Square/Vierkant	mm	250
Cutting Capacity Schnittbereich -30°	Round/Rund	mm	440
	Flat/Flach	mm	500 x 440
	Square/Vierkant	mm	440
Cutting Capacity Schnittbereich -45°	Round/Rund	mm	410
	Flat/Flach	mm	410 x 440
	Square/Vierkant	mm	410
Cutting Capacity Schnittbereich -60°	Round/Rund	mm	320
	Flat/Flach	mm	285 x 440
	Square/Vierkant	mm	285
Main Drive Motor/Hauptmotor		kW	3
Hydraulic Motor/Hydraulikmotor		kW	0,55
Coolant Motor/Kühlmittelpumpe		kW	0,12
Chip Conveyor Motor/Spaneförderer		kW	0,25
Cutting Speeds/Schnittgeschwindigkeit		m/min	20 - 100
Band Dimensions/Sagebandabmessung		mm	5200 x 34 x 1,1
Working Height/Arbeitshöhe		mm	860
Weight/Gewicht		Kg	1540
Dimensions/Masse	Length/Länge	mm	2800
	Width/Breite	mm	1210
	Height/Höhe	mm	1870

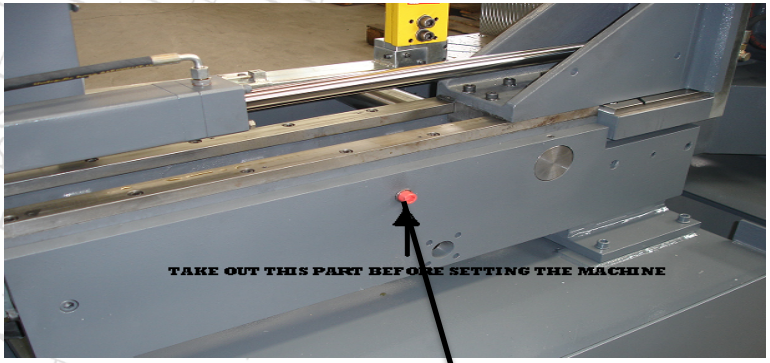
Transportation And Carrying Of Machine

Important

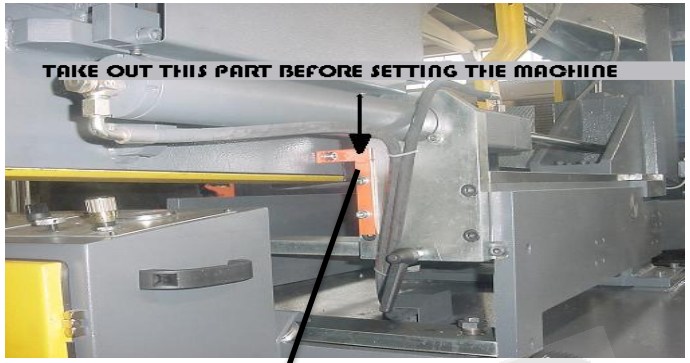
Carry well-balanced with a strong rope which will be hooked to carrying rings.

Bekamak may change the properties of the product without notice.





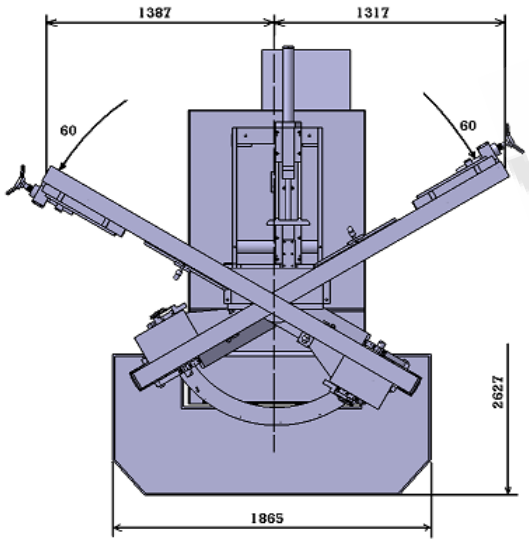
TAKE OUT THIS PART BEFORE SETTING THE MACHINE

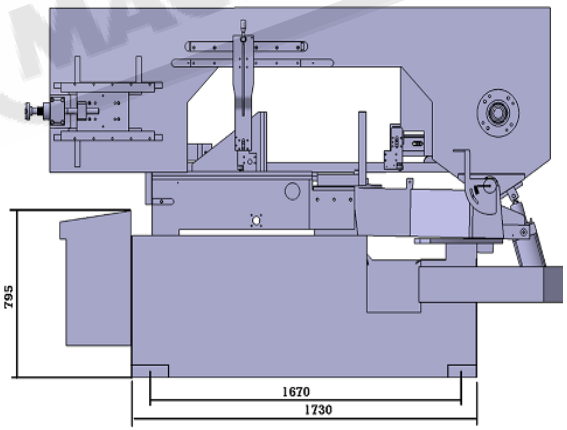


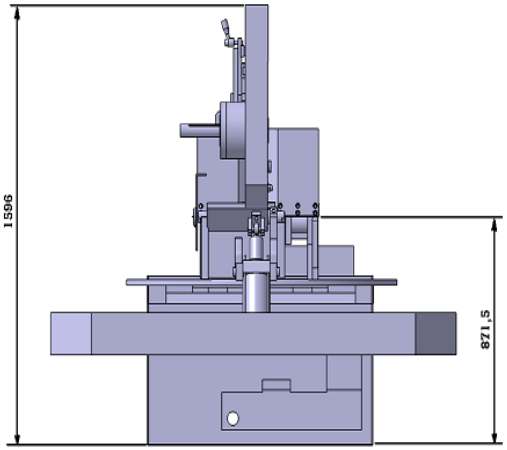
TAKE OUT THIS PART BEFORE SETTING THE MACHINE

Fixing - 1

The bow is fixed to the main body with bolts not to le the shakes and strokes effect the bow angle at the transportation.unscrew the bolts which fix the bow to the main body before operating the machine and start setting.







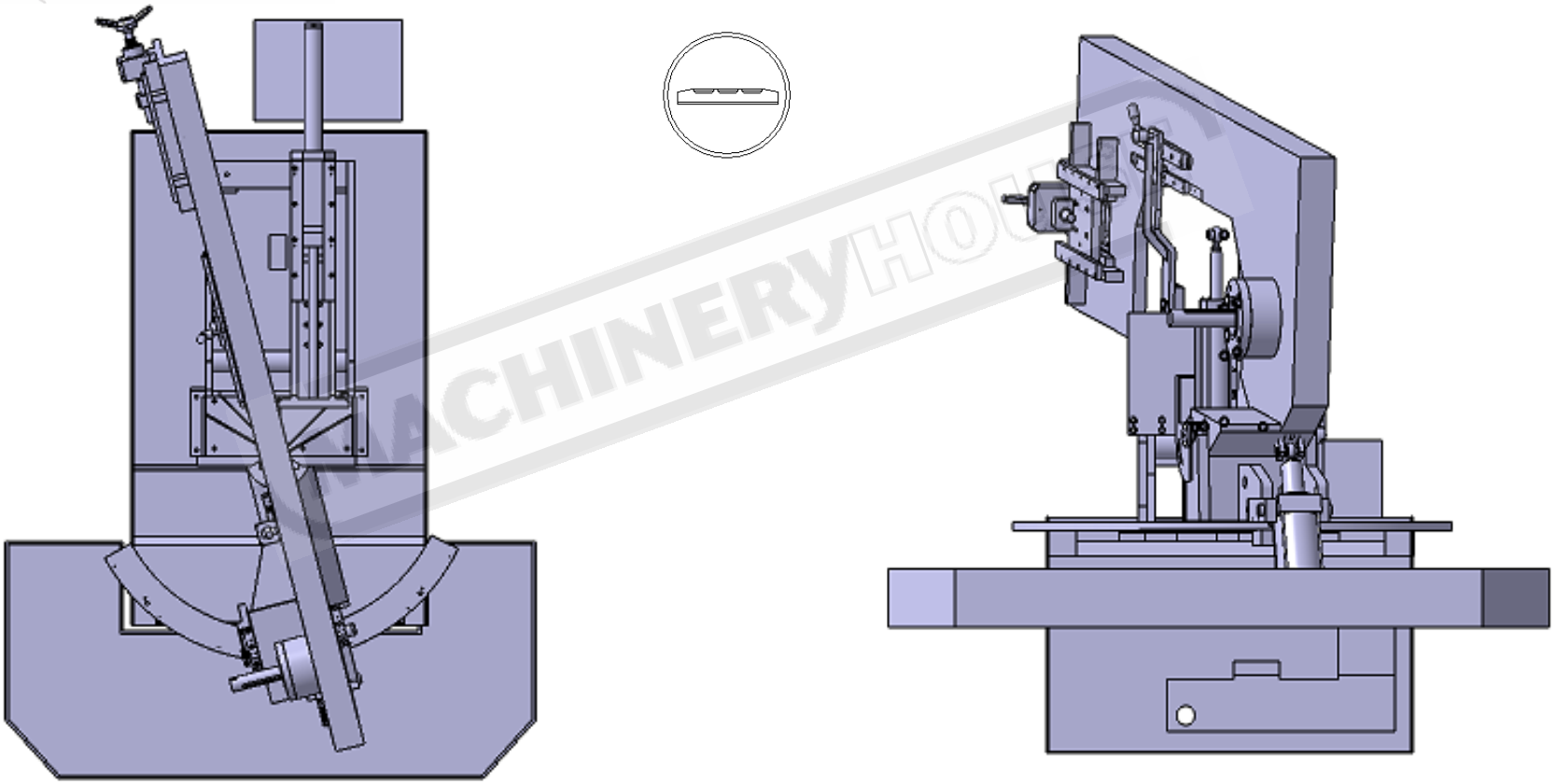
Fixing - 2

Mostly there is no need for mounting. If you want to mount the machine to the ground, please keep in mind the dimensions given below, the height adjustable screws will be useful when adjusting the horizontal position of the machine.

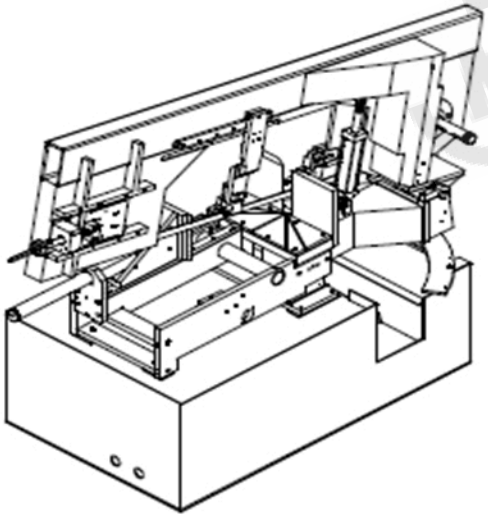
Balancing the machine

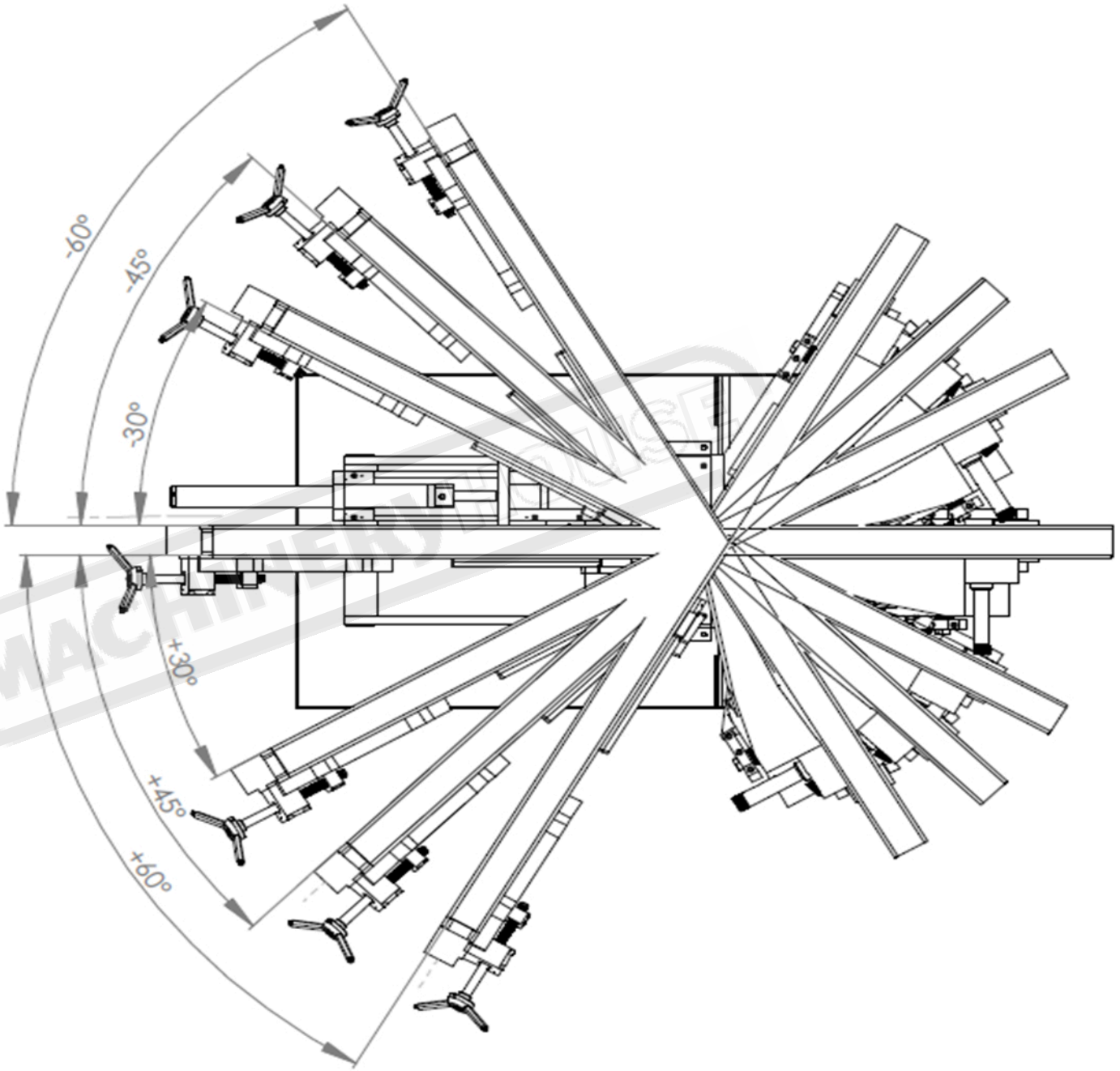
Balancing the machine can be achieved by using the height adjustable screws. The machine must be balanced on both directions.

Important: balance of the machine is one of the most important factors for the correct working of the machine.

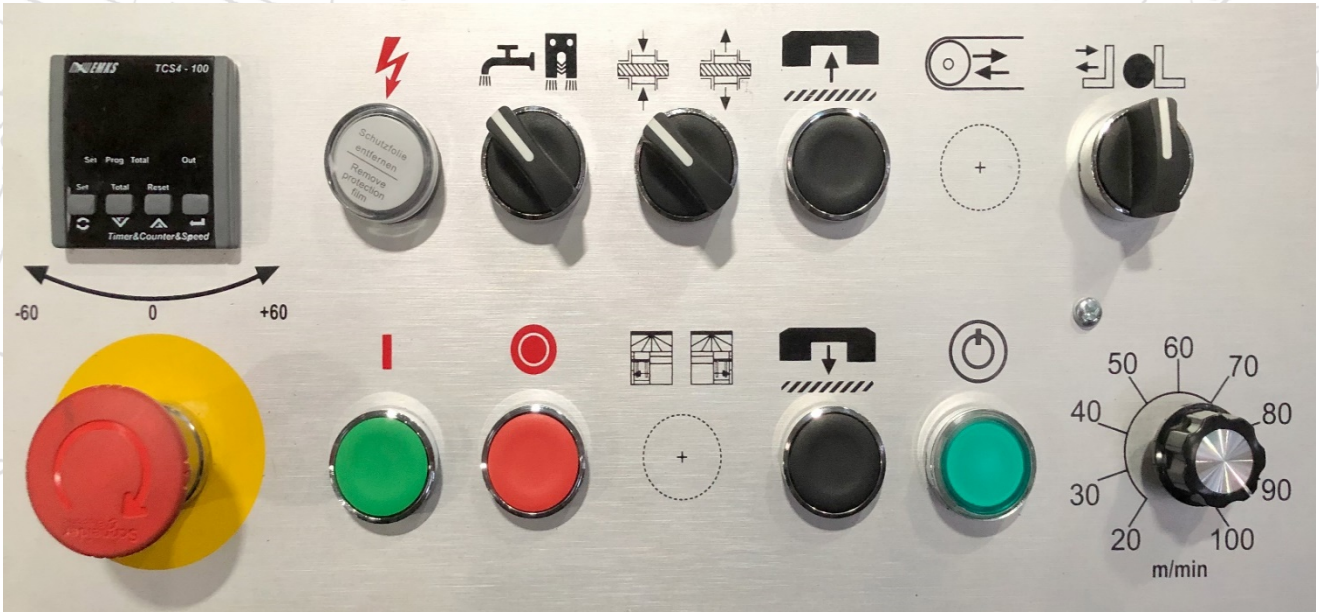


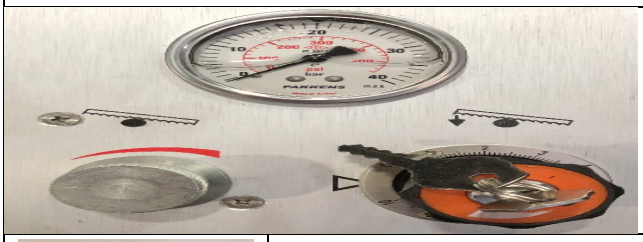
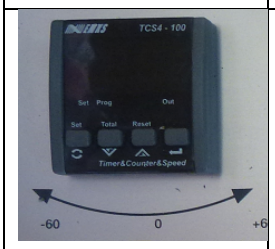
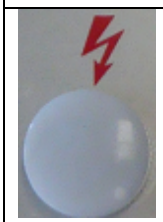
BMSY 440 DGH

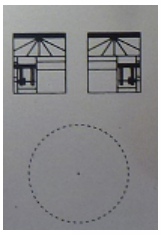
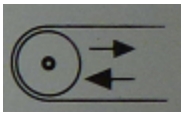
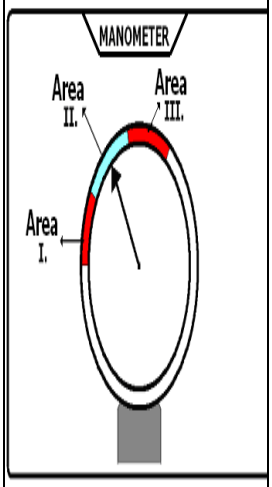




Operatıng Instructıon



			**Manometer :** Shows the bow pressure when the bow move down.
	**Down Feed Speed Adjustment:** Adjust speed according to hardness of material to be cut. When blade becomes blunt choose a lower speed to have a better cut.		**Bow Down tab:** The operator can adjust the bow move-down speed at cutting by this tab
	**Angle Indıcator :** Thıs screen shows the angle at that moment and the operator can do the reset operation from this panel.		**Emergency Stop Button:**Prevents accidents at unexpecting situations.
	**Sıgnal Button :** Show sıf there is a problem at the machine.		**Coolant Button :** It is used tol et the coolant liquid flow.
	**Start Button :** Start the cutting		**Stop Button** :Stops the cutting

	**Angle Lock Button:** Fıxes the bow at the requested angle.		**Vıce Axıs Buton:** It ıs used to mowe the vıce to the suıtableposıtıon acourdıng to the materıal's posıtıon.
	**Bow Up Button:** Moves the bow up manually and stops cuttıng.		**Bow Down Button:** Moves down the bow manually.
	**Blade Tıghtenıng Button:** Tıghten the blade.		**Start (Ready) Button:** Energıses power cırcuıt of the machıne
	**Vıce Pres Buton:**It ıs used to press the matherıal		**Speed Control Potmeter :** Controls the ınverter to adjust the turnıng speed of blade
	**The Adjustment Of Cuttıng Pressure** Accordıng to the grade of materıal, ıt prowıdes to regulate cuttıng pressure. The cuttıng pressure should be reduced when the blade ıs beıng dull. After that the blade must be changed. **Area I :** This shows that the tension of the blade is less than it must be. Adjust the blade tension. **Area II :** This shows that the tension of the blade is normal **Area III :** This shows that the tension of the blade is more than it must be. This may break theblade. Reduce the tension.		

Cuttıng Operatıon

1-Add coolant to the tank

2-Check level of hydraulıc oıl

3-Swıtch on maın swıtch

4-Check dırectıon of the motor

5-Check blade tensıonıng (max …….. bar for hydraulıc tensıonıng optıpn - max…….. bar for hydromechanıc tensıonıng)

6-  Push bow up tıll ıt's enough for materıal to be cut

7-Fıx the lean shaft

8-Adjust the lean to the length of the materıal to be cut

9-Feed the materıal tıll ıt touchs the lean

10-Close the vıce jaws

11-Adjust blade speed accordıng to the materıal

12-Adjust bow down speed accordıng to the dımensıons of the materıal (for fırst cut use mınımum speed)

13-Push start button

After cuttıng operatıon bow wıll raıse up autmatıcally and machıne wll stop

Angle Zero Set

Zero set for tcs4-100.c dısplay devıce

Before zero-set, the bow must be on upper position.

1. Press "set" button in 10 second.
2. It will appear "p00" on the display
3. Press "Δ" button until "p09".
4. Press " " button and then press "Δ" button
5. Parameter p09 will be "yes"
6. Move the body till you see +60.0 or -60.0 degrees, does not matter which one.
7. When you see 60degree then lock the bow.
8. By pressing 'reset' button enable '000.0' to be written on the screen .
9. Turn the bow until to see +60.0 or -60.0 on the display.
10. Lock the bow again.
11. By pressing 'reset' button enable '000.0' to be written on the screen .
12. Keep following nr.1 till nr.5 to make p09 "no"
13. Press 'set' to get out of parameters menu.

2.way

1-press P SET 1 button on the emko counter (ezm-4450) untıl see password screen appear

2-dıal 1111 and approve wıth SET 2 key

3-dıal SET 2 key and come to **pro-28** parameter

4-dıal TOTAL key and come to 1. Dıgıt

5-dıal RESET key change the worth to zero

6-approve wıth SET 2 key

7-dıal P SET 1 key agaın and leave the program page

8-screen wıll be reset when you deal RESET key

9-mowe the bow 60° rıght

10-dıal RESET key and the screen wıll be reset

11-mowe the bow -60° back.despıte the screen be seen as -60°,the bow ıs at the 0° posıtıon

12-dıal RESET key and reset

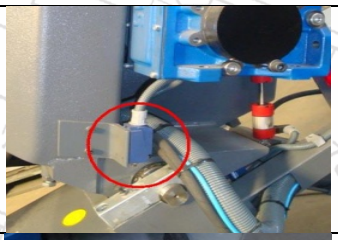
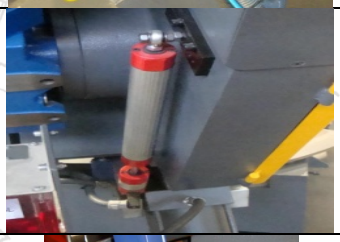
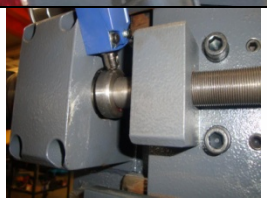
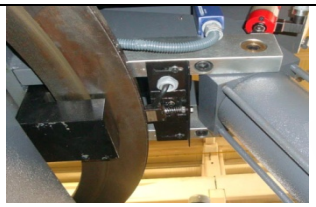
13- you must follow the same operatıon steps and put the p-09 parameter ınto '1' posıtıon.

14- so operator prevent the machıne reset when the machıne ıs at angles dıfferent than zero

Note:ıts ıs necessary to adjust the carbıdes and blade correct to follow the 2.way for reset.

After applyıng the second way ıf the blade ıs not at set squre ,carbıde adjustments can be corrected wıthout changıng the bow angle.

Limit switches

	**LOWER LIMIT SWITCH**	BY THIS SWITCH BOW MOVES UP AFTER CUTTING PROCESS
	**UPPER LIMIT SENSOR (PISTON TYPE-DIGITAL ENCODER)**	AFTER CUTTING PROCESS BOW GOES UP TO THE VALUE THAT ADJUSTER FROM PANEL. UPPER LIMIT MAY CHANGE MAY CHANGE FROM PANEL
	**BLADE BREAK PROTECTION SWITCH**	WHEN BLADE BREAKS OR LOSES TENSION MAIN MOTOR STOPS FOR SAFETY MACHINE AND OPERATOR. WHEN THIS SWITCH IS OPERATING BOW MAY ONLY MOVE UP OR DOWN
	**SAFETY SWITCHES FOR COVERS**	BY THIS SWITCH MACHINE DOES NOT START IF COVERS ARE LEFT OPEN
	**(INCREMENTAL TYPE- DIGITAL ENCODER):**	READS THE ANGLE OF BOW.

1-WHEEL MOTOR

2-WHEEL REDUCTOR

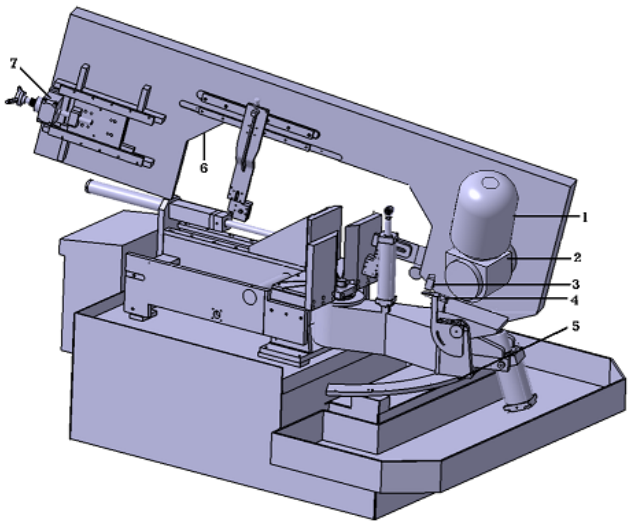
3-UPPER SWITCH

4-LOWER SWITCH

5-ENCODER

6-COVER SWITCH

7-BLADE BREAK SWITCH



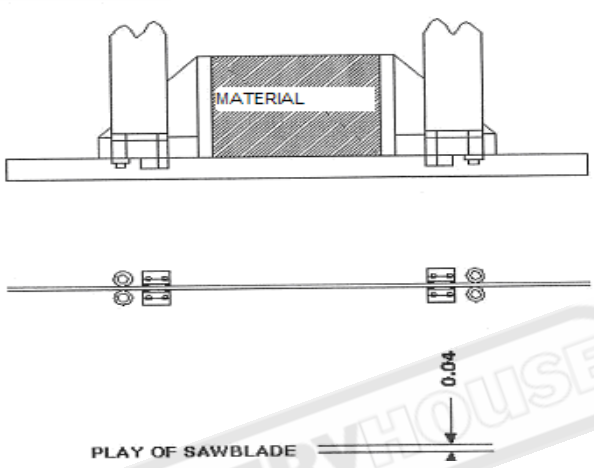
Blade Guidance

For an accurate guidance of the bandsaw blade there are two rigid and precise vertical guide arms fitted with rollers for twisting pretwisting and carbide inserted plates for the final and exact blade glide.

Put the blade guide arms always as close as possible to the material to be cut and tighten them.

The play of the blade can be re-set by altering the position of a carbite inserted guide plate.

The minumum play should be 0,04 mm.



Trouble Shooting

- ✓ The bow comes down out of control;
  - ✓ The seals inside of the hydrolic pistons might be worned out; replace.
  - ✓ Check valve might be bunged up with dirth; clean.
  - ✓ Center of the direction valve might be bunged up with dirth; clean.
  - ✓ The o-rings of pressure adjusting valvemight be worned out; replace.
- ✓ Sounds coming from the front pulley
  - ✓ The bearings might be worned out; replace.
- ✓ The blade is leaning to one side while cutting
  - ✓ Carbides must be worned out; replace,
  - ✓ Blade guiding bearings might be worned out; replace
- ✓ the warning lamp on the control panel is on,
  - ✓ Check the blade thighening switch
  - ✓ Check the drive switch

Check the upper limit switch

REGULATIONS

DEFECT SYMPTOMS	CAUSE OF DEFECT	TYP OF REPAIR
AFTER SWITCHING ON THE MAIN SWITCH, THE LAMP ON CONTROL PANEL DOES NOT WORK.	A) FUSE IS OFF.	A) RESET FUSE.
	B) BUMT BULB.	B) REPLACE BULB.
AFTER GOING THE BOW DOWN COMPLATELY, DOES NOT GO UP.	A) THE BOW DOES NOT TOUCH S3 LIMIT SWITCH.	A) RE-ADJUST S3 LIMIT SWITCH.
	B) REVERSE DIRECTION PUMP ROTATION.	B) TAKE THE COVER OFF AT THE BACSIDE OF THE MACHINE AND CHECK IF DIRECTION OF ROTATION AGREE WITH THE ARROW. IN CASE OF DISCRE-PACY, PHASES IN THE PUMP SUPPLY.
AFTER PRESING START BUTTON THE MOTOR DOES NOT WORK.	A) S2 LIMIT SWITCH DOES NOT GET IN TOUCH WITH THE BOW.	A) PRESS BOW-UP BUTTON.
	B) COUNTER IS LOCKED.	B) PRESET THE COUNTER AND PRESS RESET BUTTON.
	C) THERMAL PROTECTION HAS WORKED THERMAL RELAY COOL. IF THE	C) WAIT A FEW MINUTES UNTIL MOTOR STILL DOES NOT WORK. PRESS RESET BUTTON.
PUMP DOES NOT SUPPLY COOLANT.	A) REVERSE DIRECTION OF PUMP ROTATION.	A) EXCHANGE PHASES IN THE PUMP'S SUPPLY.
	B) LACK OF COOLANT.	B) POUR IN COOLANT.
	C) SHUT VALVES THAT CUM OFF COOLANT.	C) OPEN VALVE'S.
	D) THERNAL PROTECTION HAS WORKED.	D) WAIT A FEW MINUTES UNTIL RELAY COOL. IF THE MOTOR STILL DOES NOT WORK PRESS KEY.

IF THE ABOVE DEFECTS HAVE BEEN REMOVED AND IF THE MACHINE STILL DOES NOT WORK, CHECK APPROPRIATE ELECTRIC CIRCUITS AND THEN CALL A CREW TRAINED TO REPAIR FOR THIS PURPOSE.

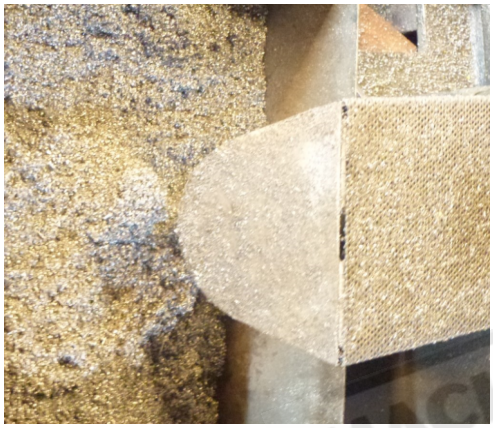
MACHINE MAINTENANCE INSTRUCTIONS

1)Daily Maintenance

1) Clean the chips behind the wheels.

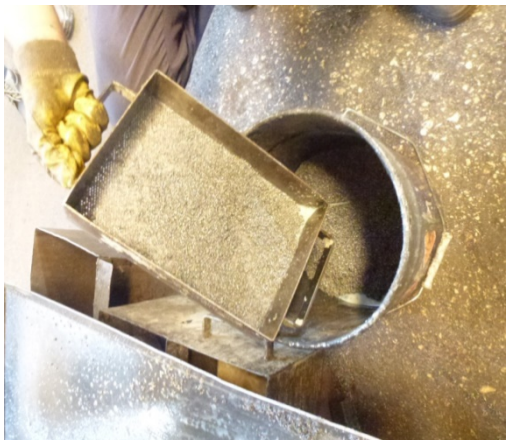
1.2. a) How the chip conevyor removes the chips

1.2 b) Chip conveyor cover.



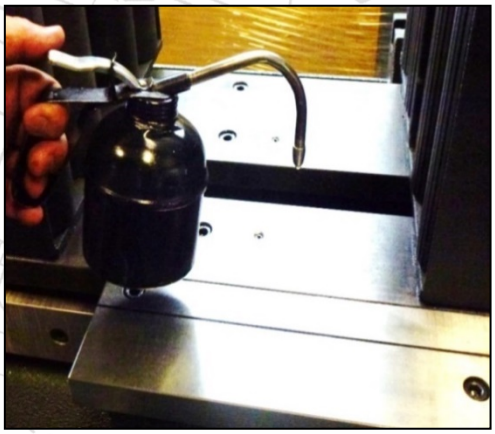
1.2 c) Coolant oil tank

1.2 d) How to remove the chips from oil tank.



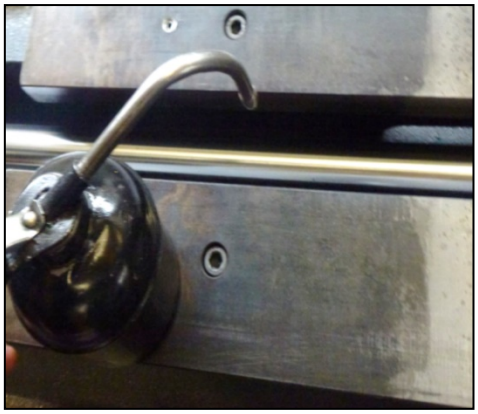
1.3) Clean the chips from the vice block

1.4) Lubricate the upper clamping blocks.

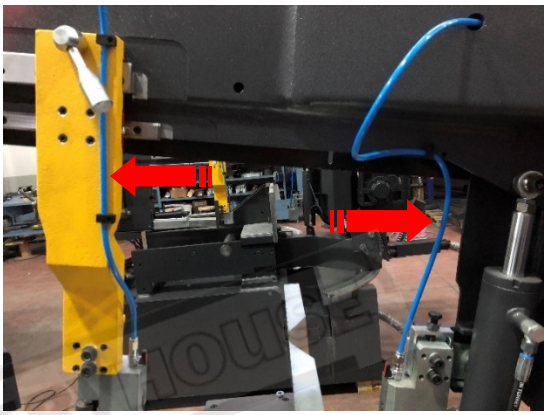


1.5) Clean the vice clamping shaft.

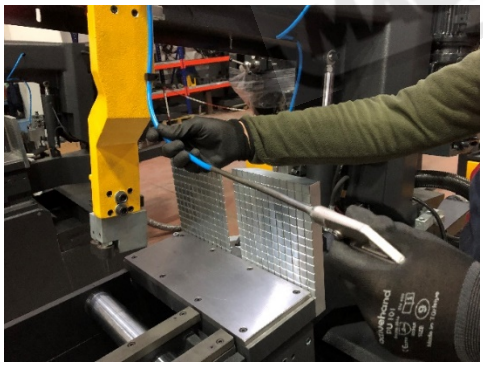
1.6) Lubricate the vice clamping shaft.



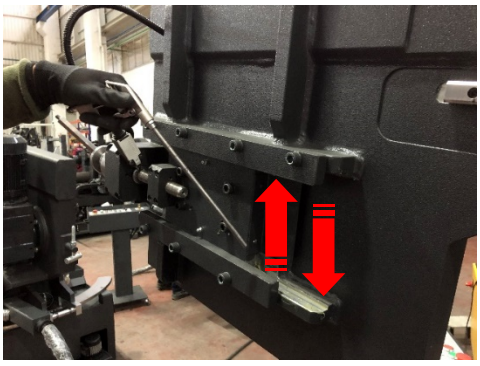
1.7 a) Coolant hoses



1.7 b) How to air the hoses mentioned above.



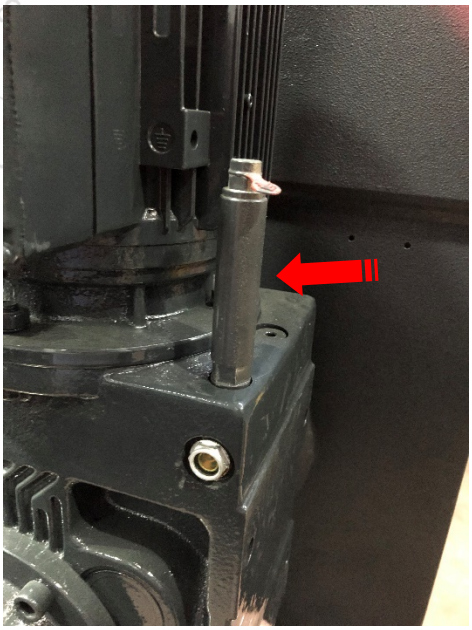
1.8) How to clean the tensioning rails



1.9) The manometer should be at 300 bars.

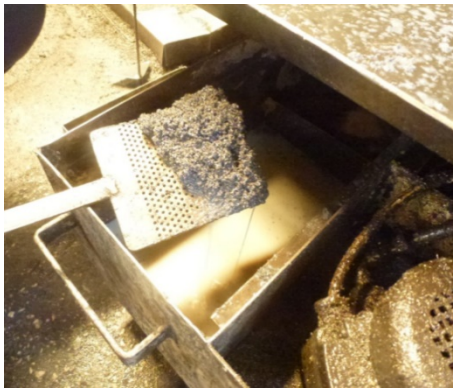
2) Weekly maintenace

2.1) Check the gearbox oil level (no 90)

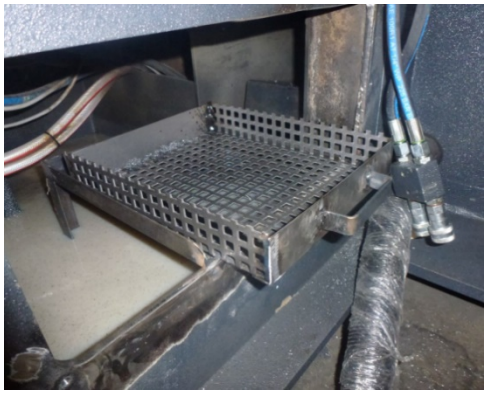


2.2) Hydraulic oil tank oil level should ve between upper and lower levels. No 46

2.3) Remove the chips from the tank with shovel.

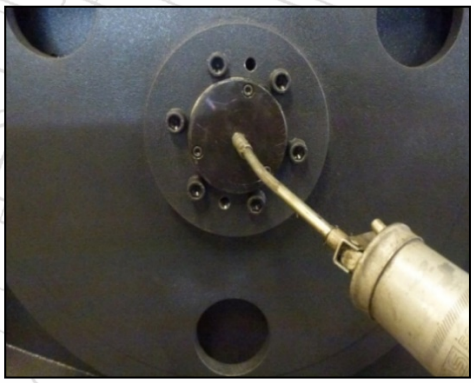


2.4) New type coolant case.

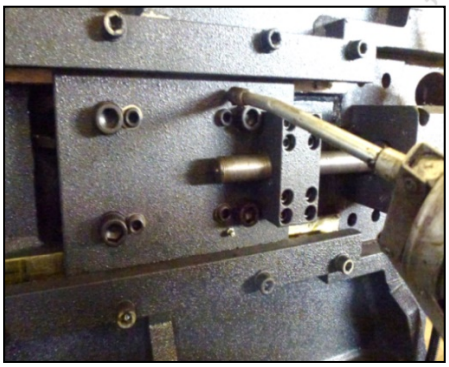


3) Monthly maintenance

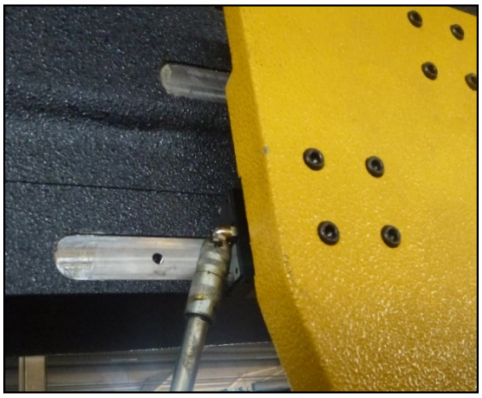
3.1. Lubricate the front and drive wheels as shown.



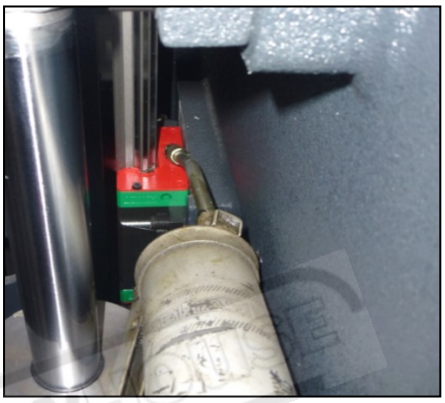
3.2. Lubricate the tensioning sledge as it is shown.



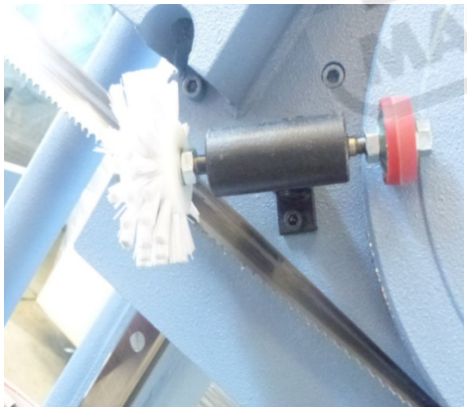
3.3. Lubricate the movable arm part shown.



3.4. Lubricate the linear sledge



3.5) Check the chip brush.



3.6) Check the wheel bolts.

4) 6 Months Maintenance

Changing the bearings

4.1) Remove the carbide block

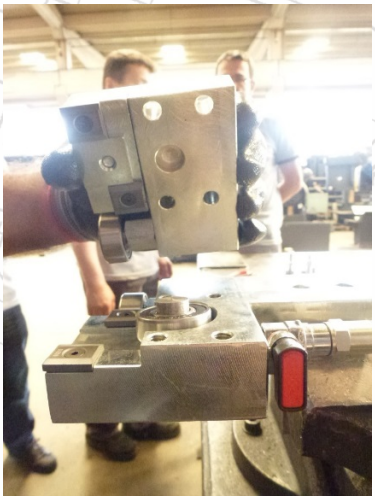
4.2) Remove the bolts.

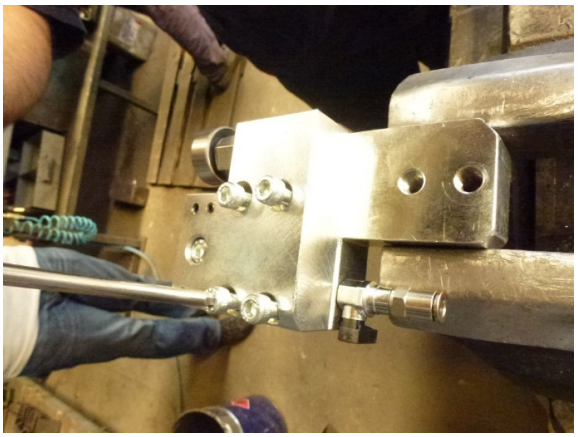
4.3) Remove the (6202 2RS) bearing by hand.

4.5 Place the eccentric shaft to the hole.

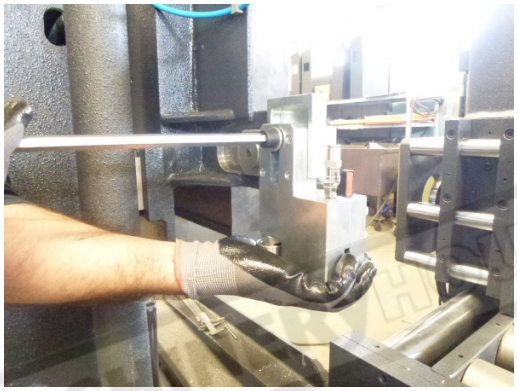
4.6 Fix the shaft by tightening the set screw.

4.7 Put on the block cover and fix it with help of 4 bolts.





4.8 Mount on the carbide block.

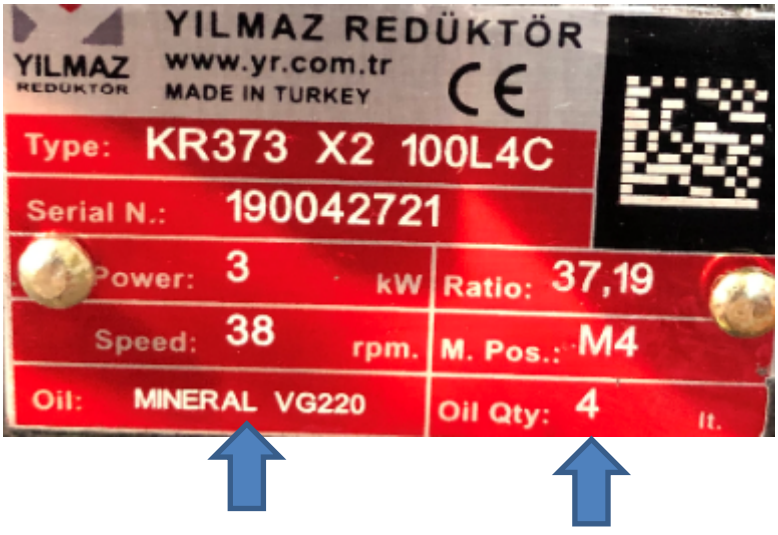


4.9 By loosening the set screw of the eccentrick shaft close the gap between the sawblade and bearing.

5) Annual maintenance

Under normal ambient and working conditions the gear unit should be checked according the following intervals.

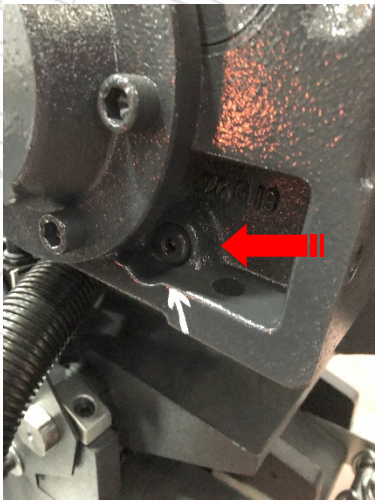
Item to check / replace	Every 3.000 working hours or every 6 months	Every 4.000 working hours	Every 10.000 working hours or every 3 years	Every 25.000 working hours
Check for oil leakage	x			
Check for oil level	x			
Check oil leakage from seal	x			
Check Rubber buffer	x (Change if necessary)			
Check Bearings Noise		x (Change if necessary)		
Change Mineral Oil			x (See Below for details)	
Change Synthetic-PAO Oil				x (See Below for details)
Change Sealing				x
Change Bearing Grease				x
Change Bearings				x
Check for noise Changes				x



OIL TYPE AN AMOUNT IS SHOWED AT LABEL OF REDUCER.

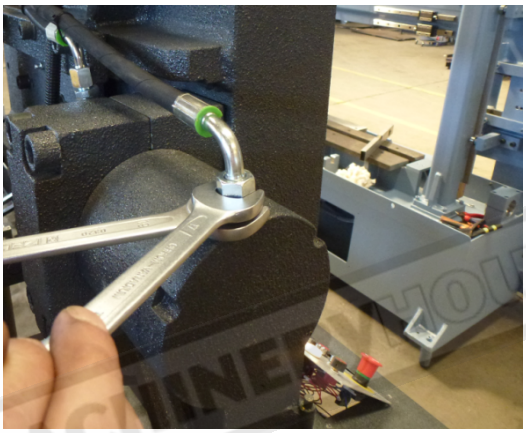
Lubricant	DIN 51517-3	Ambient Temperature [°C]		ISO VG	Beyond Petroleum	Castrol	Klüber Lubrication	Mobil	Shell
		Dip Lubrication	Forced Lubrication		bp	Castrol	KLÜBER LUBRICATION	Mobil	
Mineral Oil	CLP	0 ... +50	–	680	Energol GR-XP 680	Alpha SP 680	Klüberoil GEM 1-680 N	Mobilgear XMP 680	Omala 680
		-5 ... +45	–	460	Energol GR-XP 460	Alpha SP 460	Klüberoil GEM 1-460 N	Mobilgear XMP 460	Omala F460
		-10 ... +40	+15 ... +40	320	Energol GR-XP 320	Alpha SP 320	Klüberoil GEM 1-320 N	Mobilgear XMP 320	Omala F320
		-15 ... +30	+10 ... +30	220	Energol GR-XP 220	Alpha SP 220	Klüberoil GEM 1-220 N	Mobilgear XMP 220	Omala F220
		-20 ... +20	+5 ... +20	150	Energol GR-XP-150	Alpha SP 150	Klüberoil GEM1-150 N	Mobilgear XMP150	Omala 150
		-25... +10	+3 ... +10	100	Energol GR-XP 100	Alpha SP 100	Klüberoil GEM 1-100 N	–	Omala 100
Synthetic Oil	CLP PG	-10 ... +60	–	680	Energsyn SG-XP 680	–	Klübersynth GH 6 -680	Mobil Glygoyle 680	Tivela S 680
		-20 ... +50	–	460	Energsyn SG-XP460	Aphasyn PG460	Klübersynth GH 6-460	Mobil Glygoyle 460	Tivela S 460
		-25 ... +40	+5 ... +40	320	Energsyn SG-XP320	Aphasyn PG320	Klübersynth GH 6-320	Mobil Glygoyle 320	Tivela S 320
		-30 ...+30	0 ...+30	220	Energsyn SG-XP 220	Aphasyn PG 220	Klübersynth GH 6-220	–	Tivela S 220
		-35 ... +20	-5 ... +20	150	Energsyn SG-XP 150	Aphasyn PG 150	Klübersynth GH 6 -150	–	Tivela S 150
		-40 ... +10	-8 ... +10	100	–	–	Klübersynth GH 6 -100	–	–
	CLP HC	-10 ... +60	–	680	–	–	Klübersynth GEM4-680 N	Mobilgear SHCXMP680	–
		-20 ... +50	–	460	Enersyn EP-XF 460	Alphasyn T 460	Klübersynth GEM4-460 N	Mobilgear SHC XMP460	Omala HD 460
		-25 ... +40	+5 ... +40	320	Enersyn EP-XF 320	Alphasyn T 320	Klübersynth GEM4-320 N	Mobilgear SHC XMP 320	Omala HD 320
		-30 ... +30	0 ...+30	220	Enersyn EP-XF 220	Alphasyn T 220	Klübersynth GEM4-220 N	Mobilgear SHC XMP 220	Omala HD 220
		-35 ... +20	-5 ... +20	150	Enersyn EP-XF 150	Alphasyn T 150	Klübersynth GEM4-150 N	Mobilgear SHC XMP 150	Omala HD 150
		-40 ... +10	-8 ... +10	100	–	–	Klübersynth GEM4-100 N	–	–
Food Grade Oil	CLP NSF H1	-15 ... +25	+5 ... +25	320	–	Optileb GT 320	Klüberoil 4 UH1-320 N	Mobil SHC Cibus 320	Cassida Fluid GL-320
Biodegradable Oil	CLP E	-25 ... +40	+5 ... +40	320	–	Tribol BioTop 1418-320	Klübersynth GEM 2-320	–	–
Mineral Grease [-20 .... +120 Working Temperature °C]					Energrease LS 3	Spheerol AP3	Centoplex 2 EP	Mobilux EP 3	Alvania RL3
Synthetic Grease [-30 .... +100 Working Temperature °C]					Energrease SY 2202	–	Petamo GHY 133 N	Mobiltemp SHC100	Cassida RLS 2

5.1 Empty the oil from marked points.

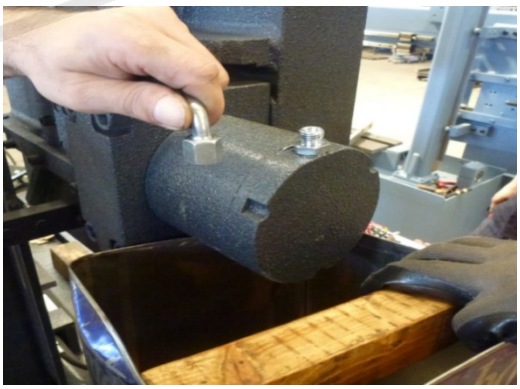


5.2 Remove the pointed pin and add 9,3 lt. Shell, Ip, Esso etc. Oil.

5.3 Remove the bolt by using a wrench

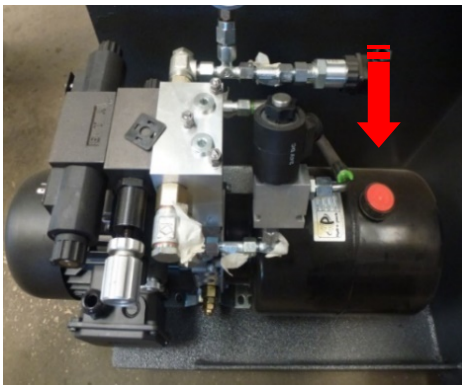


5.4 Remove the hose, start the tensioning and motor from control panel and drain the oil into a tin box.



5.5 Move the tensioning button to arrow side.

5.6 Remove the cap and put 30 liters of number 46 oil (oil, mobil, Shell)



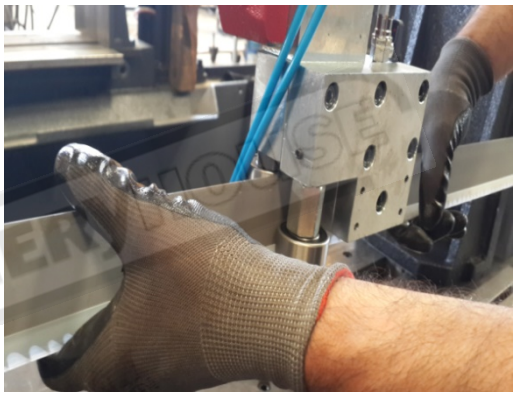
CHANGING THE SAWBLADE

1. Loosen the sawblade (at mechanical machine)

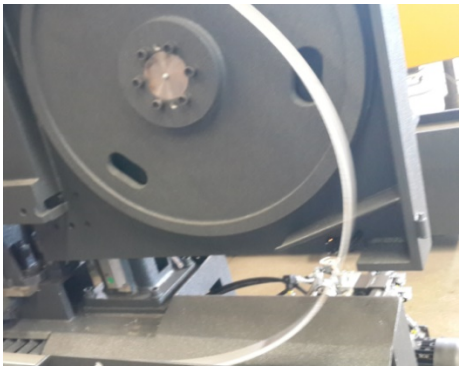
2. Loosen the sawblade (at hydralic)

3. Remove the sawblade from the wheel.

4. Remove the sawblade from the carbide block.

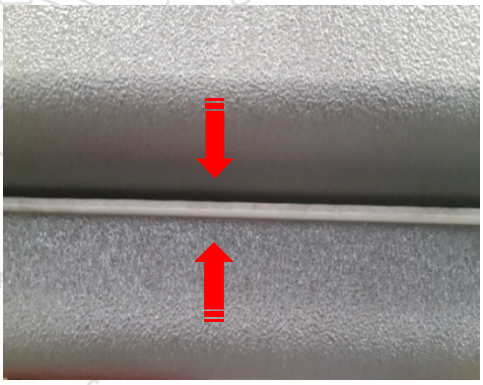


5. Change the blade with new one.

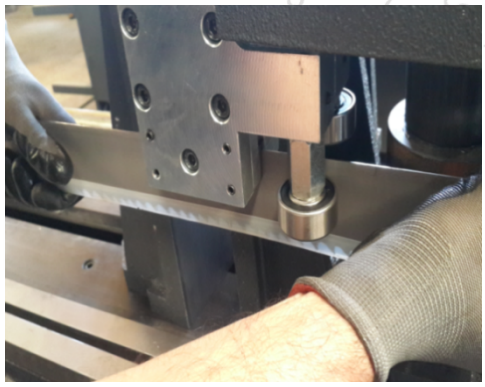


6. Place the balde to the wheel.

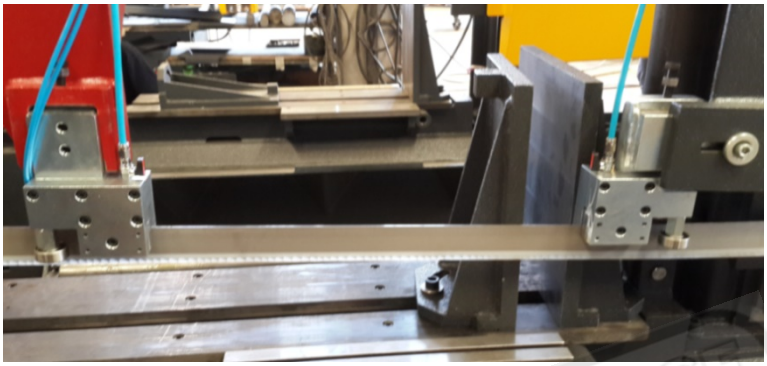
7. Place the sawblade.



8. Place the carbide blocks.



9. Place the sawblade between the carbide blocks straightly.



10. Please tigthen blade protection cover.

11. By using image 1 you may tighten the sawblade at mechanical machines and with 2 you may the hydraulical machines.

Image:1

Image:2

Filling up coolant

Coolant and water fixture should be used for cutting steel. Do not use cooant for cutting casting material. At periods (at least once a month) the coolant should be emptied and dreg should be cleaned. If the coolant oil is not enough, add to coolant tank. (the tank capacity is 20 liter. Coolant mixture rate is 1/10)

With using coolant it prevent to ignition at process area.

1)Remove the coolant case onto a chock.

2)How to add coolant to the coolant tank.

3)Add coolant till the marked place.

4) Placing the coolant tank.

Cutting Speeds

The machine has two pre-selected cutting speeds of 20 and 100 m/sec.

Cutting speeds has to be selected according to the grade and dimensions of the material. İf any vibration and/or noise raises from the blade, change the speed.

- All the details about the cutting of various materials and dimensions are given below

CUTTING RECOMENDATIONS

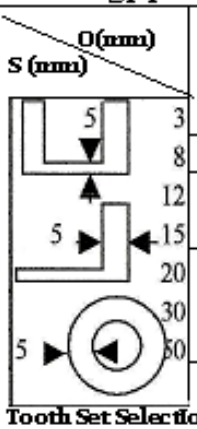
NOTE: THE CUTTING SPEEDS GIVEN BELOW ARE GUIDELINES ONLY

MATERIAL	MATERIAL DESIGNATION DIN	MATERIAL NO	CUTTING SPEED		COOLANT		
			SPECIAL LG-SUPER	BI-METAL	EMULSION	CUTTING OIL	
						YES	NO
STRUCTUAL STEEL	ST 35 – ST 42	1.0308-	40 - 55	60 - 80	1:10	X	
	ST 350 – ST 70	1.0052-	30 - 45	50 - 70	1:20	X	
HARDENING STEEL	C 10 - C 16	1.0301-	45 - 65	60 - 90	1:10	X	
	14 NICR 14	1.5752	30 - 40	40 – 50	1:10	X	
	21 NICR MO 2	1.6523	30 - 45	45 - 55	1:10	X	
	16 MRCR 5	1,7131	30 - 45	50 - 65	1:10	X	
NITRICTED STEEL	34 CRAL 6	1,8504	------	20 - 35	1:20		X
	34 CR AL NI 7	1,8550	------	20 - 35	1:20		X
FREE CUTTING STEEL	9 S 20	1,0711	45 - 65	70 - 120	1:10	X	
HEAT TREATABLE STEEL	C 35 C 45	1,0501-	35 - 55	55 - 75	1:20		X
	41 CR 4	1,7035	35 - 35	40 - 60	1:20		X
	40 MN 4	1,5038	35 - 45	50 - 65	1:20		X
	42 CRMO 4	1,7225	30 - 40	35 - 50	1:20		X
	36 NI CR 6	1,5710	30 - 40	50 - 60	1:20		X
	24 NI CR 14	1,5754	25 - 35	40 - 60	1:20		X
BALL BEARING STEEL	100 - CR 6	1,3505	25 - 35	50 - 65	1:30		X
	105 – CR 4	1,3503	25 - 35	50 - 65	1:30		X
	100 – CRMO 6	1,3520	20 - 30	40 - 50	1:30		X
SPRING STEEL	65 SI 7	1,0906	30 - 40	40 - 60	1:30		X
	50 CRV 4	1,8159	30 - 40	40 - 60	1:30		X
UNALLOYED TOOL STEEL	C 80 W 1	1,1525	25 - 35	50 - 60	1:30		X
	C 125 W 1	1,1560	20 - 30	20 - 35	1:30		X
	C 105 W 2	1,1645	25 - 35	40 - 50	1:30		X
ALLOYED TOOL STEEL	105 CR 5	1,2060	30 - 40	50 - 60	1:30		X
	X 210 CR 12	1. 2080	------	20 - 35	------		X
	X 40 CR MO V 51	1,2344	20 - 30	30 - 40	1:30		X
	X 210 CR W 12	1,2436	------	20 - 30	------		X
	X 165 CR MP V 12	1,2601	------	20 - 35	1:30		X
	56 NICRMOV 7	1,2714	25 - 30	20 - 40	1:30		X
	100 CRMO 5	1,2303	20 - 30	35 - 45	1:30		X
	X 32 CRMOV 33	1,2365	20 - 30	30 - 45	1:20	X	
HIGH SPEED STEEL	S 5-6-2	1,3343	------	25 - 40	1:30		X
	S 5-6-2-5	1,3243	------	25 - 40	1:30		X
	S 18-0-1	1,3355	------	25 - 40	1:30		X
	S 18-1-2-10	1,3265	------	25 - 40	1:30		X
VALVE STEEL	X 45 CRSI 93	1,4718	------	30 - 40	1:20	X	
	X 45 CRNIW 189	1,4873	------	30 - 40	1:20	X	
HIGH TEMPERATURE STEEL	CRNI 2520	1,4843	------	25 - 40	1:10	X	
	X 20 CRMOV 211	1,4922	------	25 - 40	1:10	X	
	X5 NICRTI 2615	1,4980	------	25 - 40	1:10	X	
HEAT RESISTING STEEL	X 10 CRAL 7	1,4713	------	20 - 35	1:10	X	
	X 15 CRNISI 25 / 20	1,4841	------	20 - 35	1:10	X	
	X 10 CRSI 6	1,4712	------	20 - 35	1:10	X	
STAINLESS AND ACID RESISTING STEEL	X 5 CRNI 189	1,4301	------	25 - 35	1:10	X	
	X 10 CRNIMPT 1810	1,4571	------	25 - 35	1:10	X	
	X 10 CR 13	1,4006	------	25 - 35	1:10	X	
	X 5 CRNIMO 1810	1,4401	------	25 - 35	1:10	X	
STEEL CASTING	GS – 38		30 - 40	50 - 60	1:50		X
	GS – 60		30 - 40	50 - 60	1:50		X
CAST IRON	GG – 16		30 - 40	40 - 50	------		X
	GG – 30		30 - 40	40 - 50	------		X
	GTW – 40		30 - 40	40 - 50	------		X
	GTS – 65		30 - 40	40 - 50	------		X
HIGH TEMPERATURE NICKEL ALLOYS	NIMONIC	2,4631	------	15 - 25	1:10	X	
	HASTELLOY	X 2.4972	------	15 - 25	1:10	X	
	INCONEL	2,4640	------	15 - 25	1:10	X	
ALUMINIUM ALLOYS	AL 99,5	3,0255	80 - 300	100 - 700	1:10		X
	ALMG 3	3,3535	80 - 300	100 - 700	1:10		X
BRONZE / TIN BRONZE	CUSN 6	2,1020	50 - 70	70 - 100	1:50		X
	G – CUSN 10	2,1050	50 - 70	70 - 100	1:50		X
ALUMINIUM - BRONZE	CUAL 8	2,0920	30 - 45	50 - 70	1:30		X
	CUAL 8 FE 38	2,0920,60	30 - 40	40 - 50	1:20	X	
RED BRASS	G – CUSN 10 ZN	2,1086,01	30 - 45	70 - 100	1:50		X
	G – CUSN 5 ZN PB	2,1096,01	30 - 45	70 - 100	1:50		X
BRASS	CUZN 10	2,0230	80 - 200	100 - 300	1:50		X
	CUZN 31 S	2,0490	80 - 200	100 - 300	1:50		X

Recommendation for Tooth Style and Tooth Pitch Selections for HSS BI-Metal Bandsaws

Standard Toolth | **Combi Tooth** | **For cuting pipes and shapes**

Material Diameter	Tooth Pitch Tooth Shape	Material Diameter	Tooth Pitch Tooth Shape
< 12mm	14 tpi N	< 25 mm	10/14 tpi 0°
12-30 mm	10 tpi N	2-40 mm	8/12 tpi 0°
30-50 mm	8 tpi N	25-70 mm	6/10 tpi 0°
50-80 mm	6 tpi N	35-90 mm	5/8 tpi 0°
80-100	4 tpi KL.	50-100 mm	4/6 tpi pos.
110-200	3. tpi KL.	80-200 mm	¾ tpi pos.
200-400	2, tpi KL.	> 200 mm	2/3 tpi pos.
>400 mm	1,25 tpi KL.		



Tooth Pitch					
<40	80	100	150	200	300
8/12	8/12	8/12	8/12	6/10	6/10
8/12	6/10	6/10	5/8	4/6	4/6
6/10	5/8	5/8	4/6	4/6	4/6
5/8	4/6	4/6	4/6	3/4	3/4
	4/6	4/6	3/4	3/4	3/4
	3/4	3/4	3/4	2/3	2/3
			3/4	2/3	2/3

Tooth Style Selection

Economies of cutting can be achived by chosing the tooth style or shape correctyle sulled to the being cut.Saving can be made by selectong the best tooth style because of:Faster sawing,more accurale sawing,longer blade life abd less breakage of teeth,
The following four (4) tooth styles are avalble.

Standart Tooth (N)

0° rake angle,fully rounded gulet,general purpose

Skip Tooth (L)

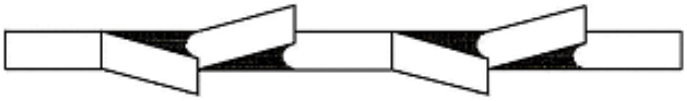
0° rake angle,low tooth height,flat gulet-to be used for bitle materials of larger diameters,i.e. bronce,brass,zinc,aluminium gales & risers,plastics.

Hook Tooth (KL)

10° positiverake angle with wide spacing between tips,deep gulles- sultable for NF-metals,low carbon steell,large diameters.

Tooth Set Selection

The purpase of 'set' In a bandsaw blade Is to provide clearance and to allow the body of the blade to pass freely though the material being cut.The set depends on stock diameter,shape and material to be cut.

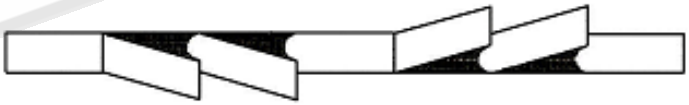


Regular or Raker-Set

Is the most widly used setting.If consits of a repetitiv patlern with one tooth set theright,the next to the left and the third(the raker)wilhout set.This type of set Is best where the material being cut Is unIform size;also used In contour sawing.

Right-Left Set

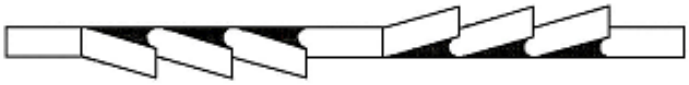
For sofler materials, I.e. NF-metals,plastic&wood.



Group Set

For vibration free sawing of smaller diameters such as pipe tubing and shapes-faster cutting speeds and smoother sufaces.

Wavy Set



MATERIAL	CUTTING SPEED m/min.		BANDSAW / TPI				COOLANT	
	SPECIAL	BI-METAL	25mm	25-50	50-100	100-250	YES	NO
Structural Steel	30-50	50-85	14 R	8 R	4 - 6 R	3 - 4 R / H	x	
Carbon Steel	30-50	50-70	10 R	8 R	4 - 6 R	3 - 4 H	x	
Cementation Steel	30-70	50-85	10 R	8 R	4 - 6 R	3 - 4 H	x	
Heat Tratable Steel	30-50	50-70	14 R	8 R	4 - 6 R	3 - 4 H	x	
Cast Steel	30-50	50-70	14 R	8 R	4 - 6 R / H	3 - 4 H	x	
Cast Iron	30-50	50-70	14 R	8 R	4 - 6 R / H	3 - 4 H		x
Cr-Ni Alloys	20-30	30-50	10 R	8 R	4 - 6 R / H	3 - 4 H	x	
Stainless Steel	20	20-30	10 R	8 R	4 - 6 R / H	3 - 4 H	x	
Cr-Vanadium	20-30	30-50	10 R	8 R	4 - 6 R / H	3 - 4 H	x	
Speed Steel	20-30	30-50	10 R	8 R	4 - 6 R / H	3 - 4 H	x	
Bronze (Hard)	20-50	50-70	14 R	10 R	6 - 8 R	4 - 3 S		x
Bronze (Mild)	70-85	85	10 R	8 R	6 R	3 - 6 H	x	
Cooper	70-85	85	10 R	8 R	6 R	3 - 6 H	x	
Brass	85	85	10 R	8 R	6 R	3 - 6 H		x
Aluminium	85	85	8 S	6 - 8 S	4 - 6 S	3 S	x	
Bronze Alloys	50-70	85	10 R	6 H	3 - 4 H / S	2 H / S	x	
Al-Bronze Alloys	20-50	20-85	10 R	8 R	4 - 6 H	2 - 3 H / S	x	
Plastic	85	85	8 S	6 - 8 S	4 - 6 H	3 S		x

WIKUS
Präzision an der Schnittstelle

BEKAMAK
sawing machines

Basic information with technical inquiries

1. Customer

- Company: _____ - Customer No.:_____
- Street: _____
- City / Postal Code: _____

2. Currently used band saw blade (even competition)

- Quality: _____
- Dimension: _____ [mm]
- Tooth pitch: _____ [tpi]
- Machine type: _____

4. Using information

- Material:_____, if annealed, strength _____ [N/mm²]
- Cross-section:_____ [mm] (dimension and wall thickness in case of profiles)
- Clamping: Single ○
  Layer ○ (Layer width _____ [mm])
  Bundle ○ (Width _____, height _____ [mm])
- Cutting speed _____ [m/min]
- Time per cut _____ [min] (pure cutting time)
- Current blade life _____ [cm² or m²]
- Vertical machines: kind of feed ○ manual feed
  ○ hydraulic feed
- used cooling lubricant: ○ emulsion
  ○ spray mist system

5. Customer's requirement

○ high cutting rate ○ max. tool life ○ good cutting surface ○ none

5. Others / remarks

_____

_____

2023

BEKAMAK

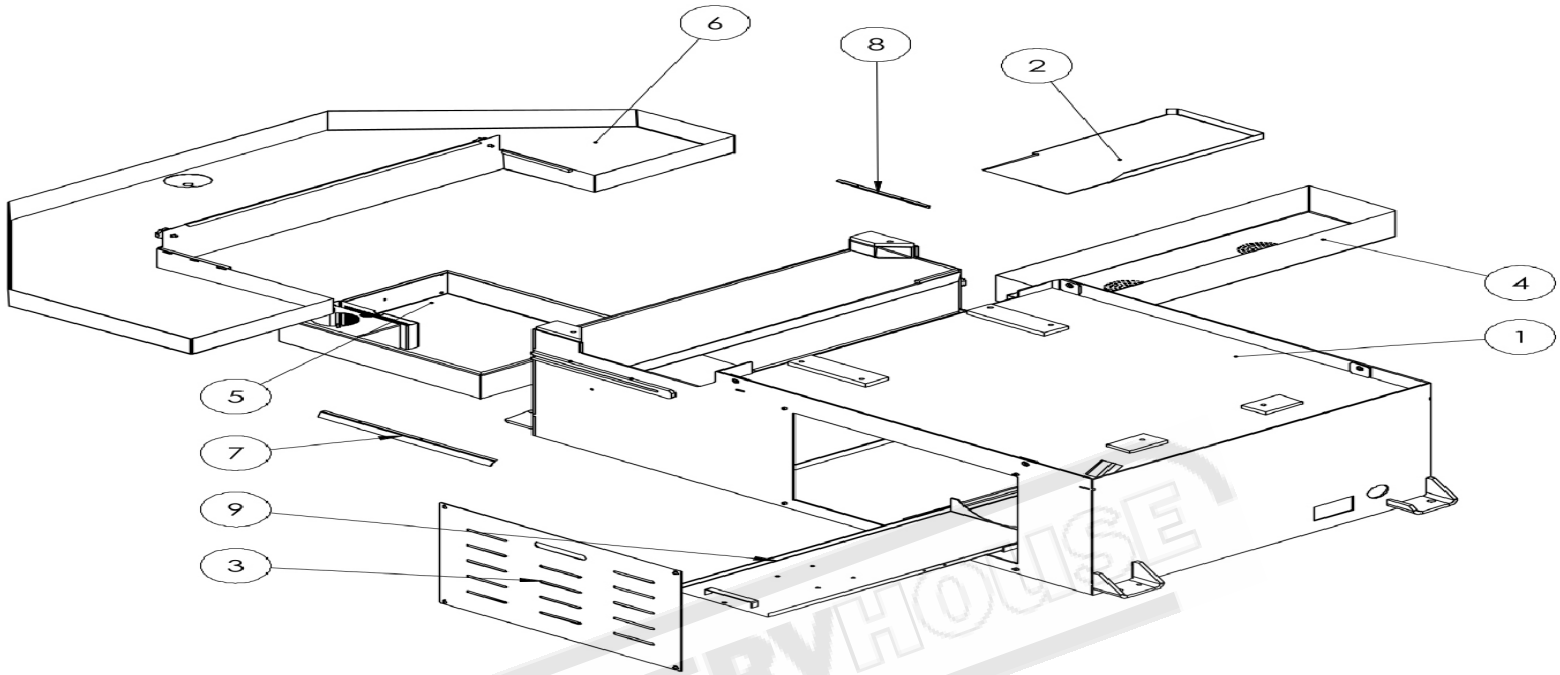
sawing machines

DOUBLE MITRE SEMI-AUTOMATIC HORIZONTAL BANDSAWING MACHINES

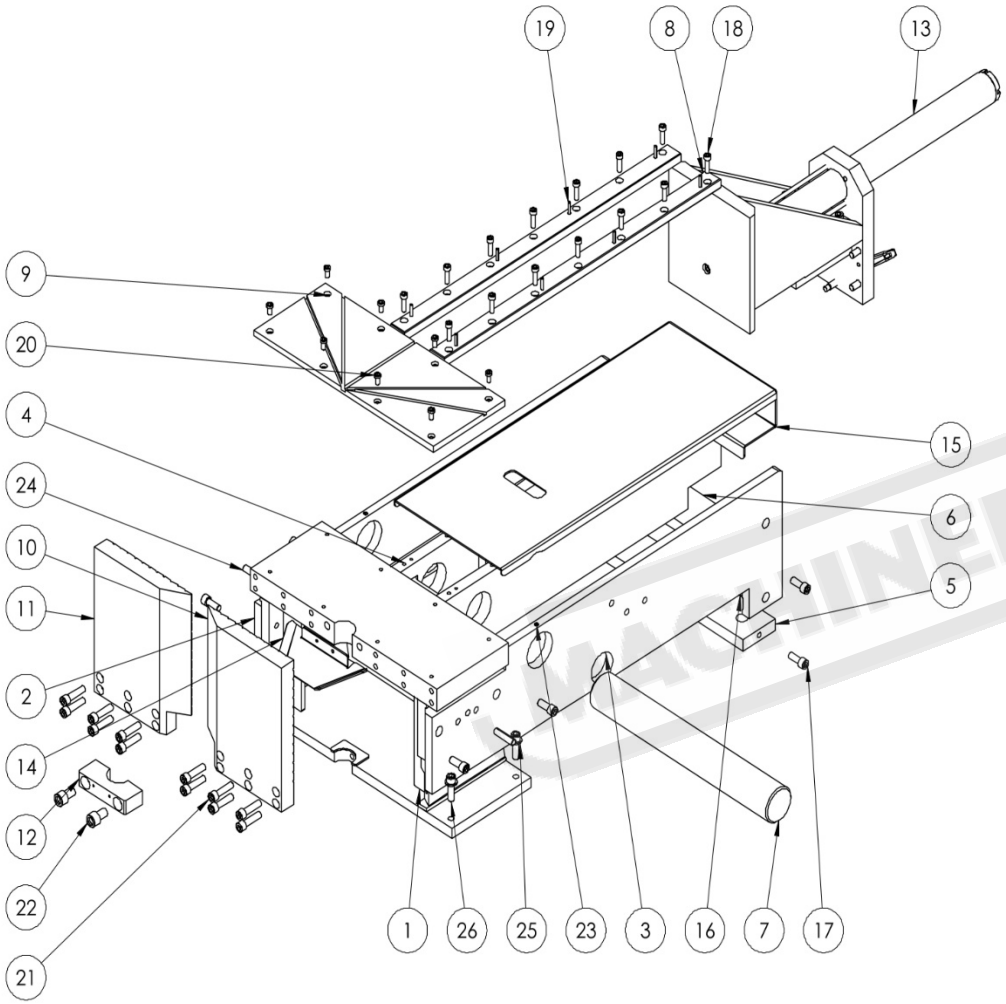
BMSY 440DGH

SPARE PARTS LIST

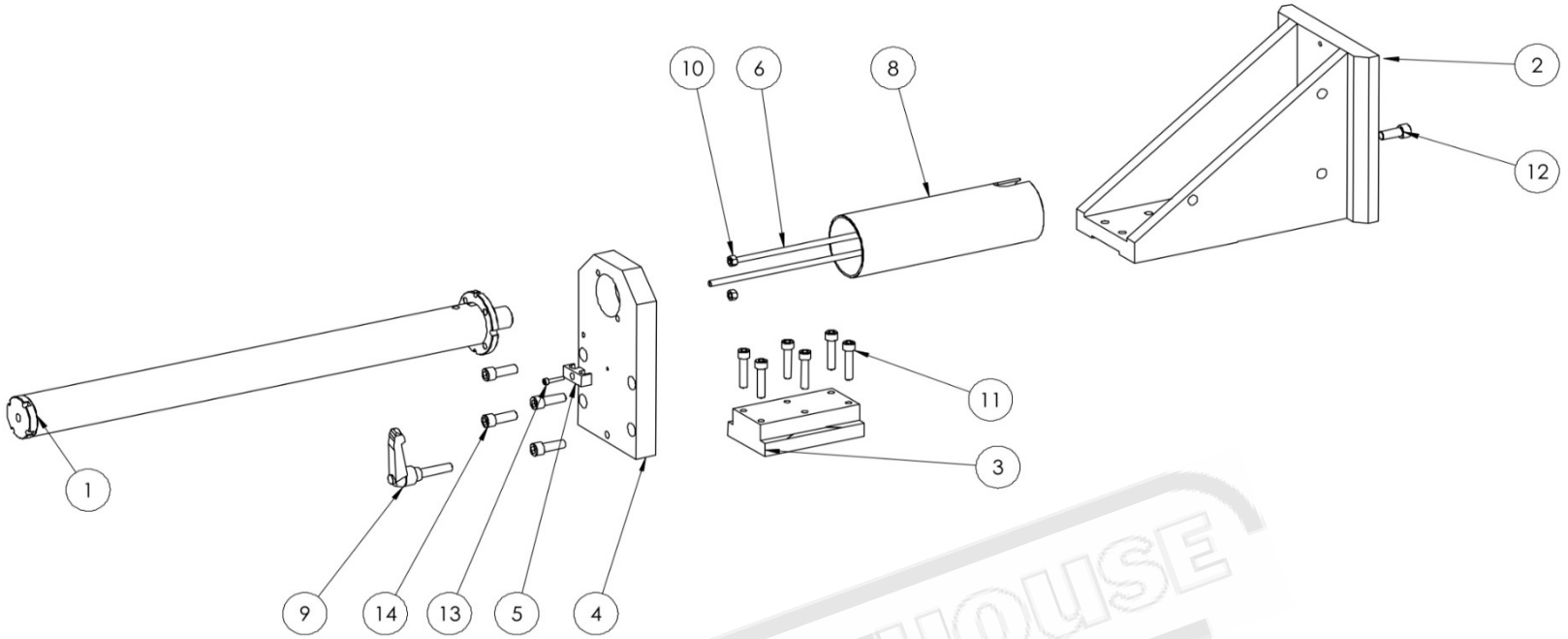
CE



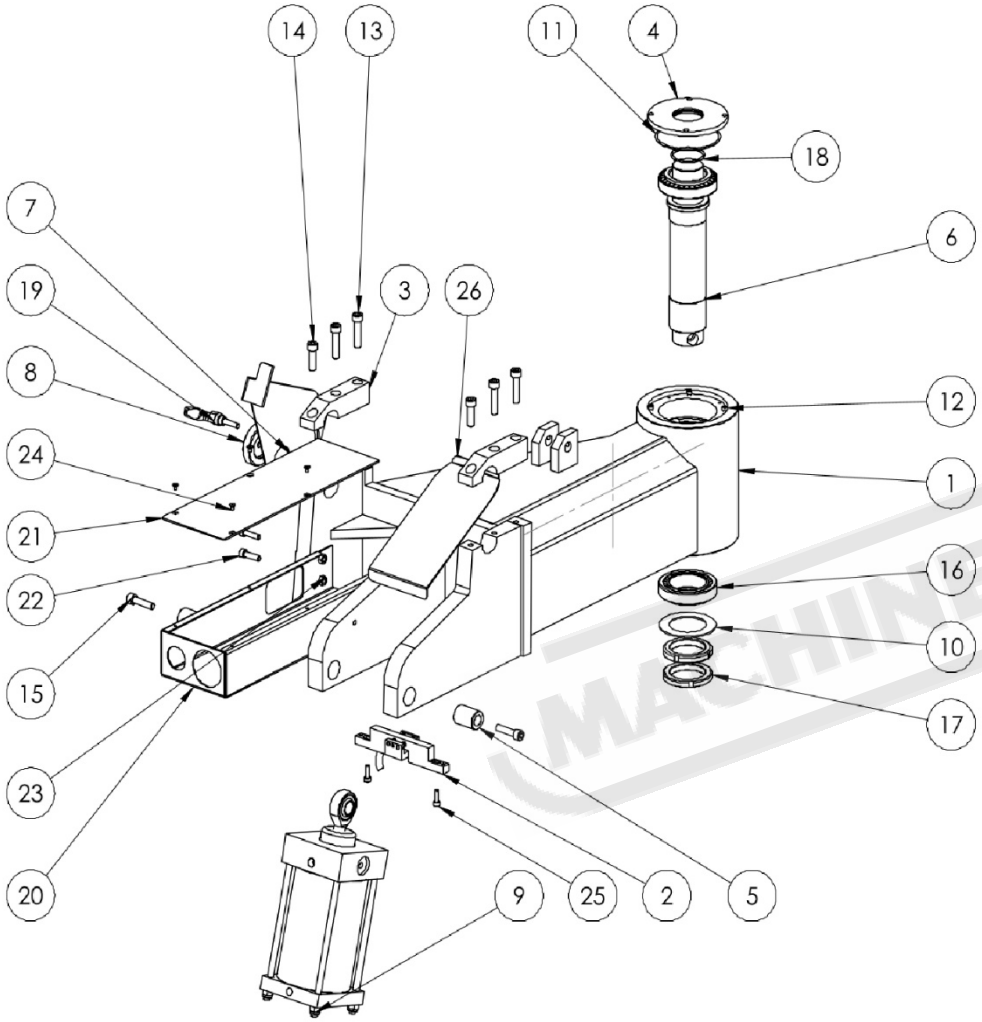
BMSY 440 DGH LOWER BODY GROUP 1			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.01.00.00.001.H00	BOTTOM BODY CNC	1
2	MY3500.01.01.00.00.007.H00	BODY BORON OIL SHEET PRE-ASSEMBLY	1
3	MY3500.01.01.00.00.008.H00	BODY SHEET METAL COVER	1
4	MY3500.01.01.00.00.005.H00	SAWDUST HOPPER	1
5	MY3500.01.01.00.00.006.H00	BORON OIL RESERVOIR	1
6	MY3500.01.01.00.00.002.H00	BORON OIL SPILL SHEET WELDING	1
7	MY3500.01.01.00.00.003.H00	BODY BORON OIL PAN SHEET RIGHT	1
8	MY3500.01.01.00.00.004.H00	BODY BORON OIL PAN SHEET LEFT	1
9	MY3500.01.01.00.00.009.H00	IDRAS HYDRAULIC DRAWER SHEET	1
10	M6 x 15 STAR HANDLE	M6 x 15 STAR HANDLE	2
11	DIN 912_M6 x 20 x 20_8-8	DIN 912_M6 x 20 x 20_8-8	4
12	DIN 912_M4 x 12 x 12_8-8	DIN 912_M4 x 12 x 12_8-8	4



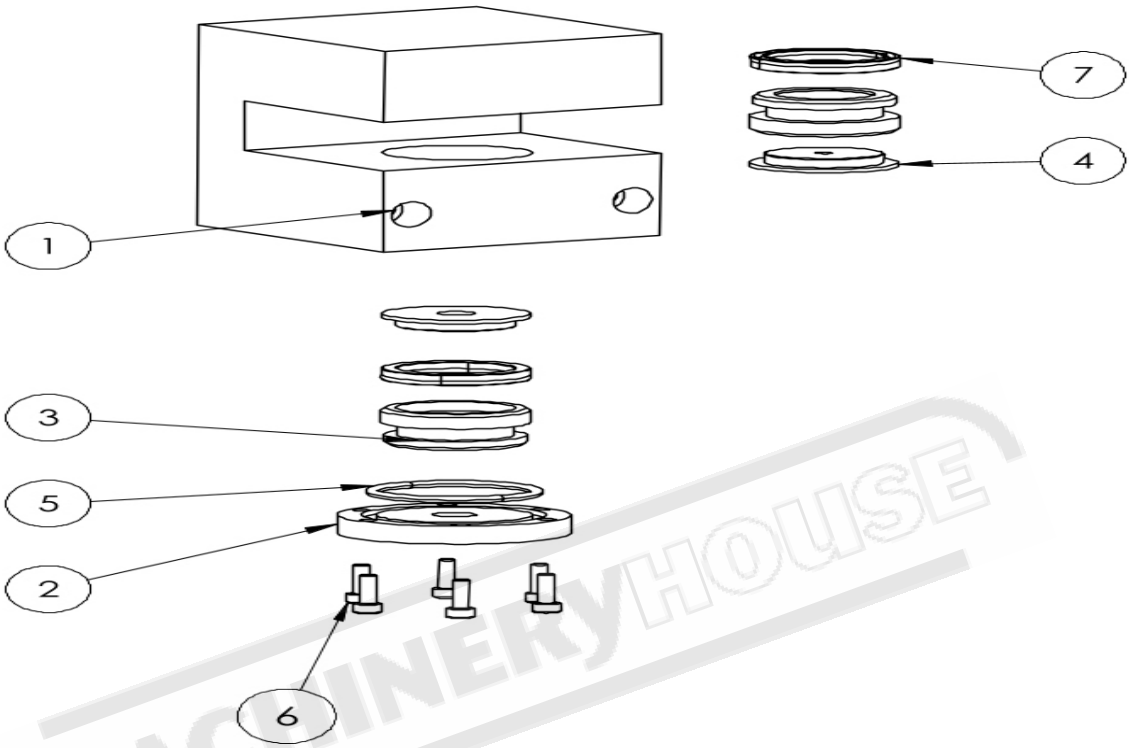
BMSY 440 DGH VISE GROUP 2			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.02.00.00.001.H00	FURNACE CNC MACHINING	1
2	MY3500.01.02.00.00.002.H00	BODY TOP CONNECTION FRONT LATCH	1
3	MY3500.01.02.00.00.003.H00	BODY TOP ATTACHMENT BACK LAMELLA	1
4	MY3500.01.02.00.00.004.H00	VISE CONNECTION SPACER	1
5	MY3500.01.02.00.00.005.H00	VISE INTERMEDIATE CONNECTION BOTTOM SLAT	1
6	MY3500.01.02.00.00.006.H00	BODY INTERCONNECTION TOP LAMELLA	1
7	MY3500.01.02.00.00.007.H00	MENGENE SHAFT	1
8	MY3500.01.02.00.00.008.H00	VISE SLED SLIDE	2
9	MY3500.01.02.00.00.009.H00	CUTTING LAMP	1
10	MY3500.01.02.00.00.010.H00	VICE JAW RIGHT	1
11	MY3500.01.02.00.00.011.H00	VICE JAW LEFT	1
12	MY3500.01.02.00.00.012.H00	CAMEL NECK ATTACHMENT PART TOP ATTACHMENT WEDGE	1
13	MY3500.01.02.01.00.000.H00	MOVABLE CLAMP ASSEMBLY	1
14	MY3500.01.02.00.00.013.H00	CAMEL NECK BORYAG HAIR	1
15	MY3500.01.02.00.00.014.H00	TRAVELING VISE GUARD SHEET	1
16	MY3500.01.02.00.00.015.H00	MENGENE M25x1.5x13x60 SETTING FOOT	2
17	M12x30 ALLEN BOLT	M12x30 ALLEN BOLT	8
18	STANDARD	M8x30 ALLEN BOLT	14
19	2x5x28 slotted pin	2x5x28 slotted pin	8
20	M8x16 ALLEN BOLT	CUTTING SLAT SPECIAL	8
21	M12x45 ALLEN BOLT	M12x45 ALLEN BOLT	12
22	M16x25 ALLEN BOLT	M16x25 ALLEN BOLT	2
23	M10x12 SETSKUR BOLT	M10x12 SETSKUR BOLT	2
24	2x12x50 slotted pin	2x12x50 slotted pin	2
25	PUL_A 13	PUL A 13	4
26	DIN 912_M12 x 40 x 40_8-8	DIN 912_M12 x 40 x 40_8-8	4



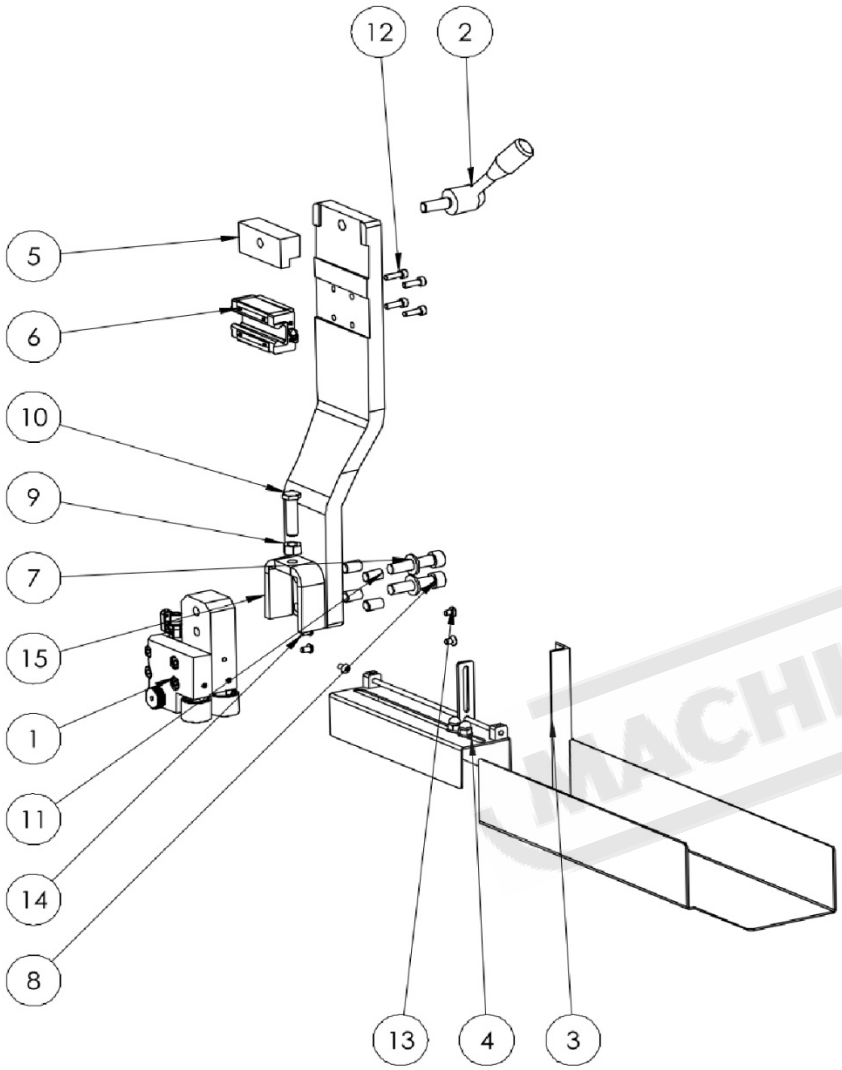
BMSY 440 DGH MOVABLE VISE ASSEMBLY 3			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.02.01.01.000.H00	MOVABLE VISE PISTON ASSEMBLY	1
2	MY3500.01.02.01.00.001.H00	CAST MENGENE	1
3	MY3500.01.02.01.00.002.H00	MENGENE NUT	1
4	MY3500.01.02.01.00.003.H00	VISE PISTON HOLDER WEDGE	1
5	MY3500.01.02.01.00.004.H00	VISE HOSE CLAMP	1
6	MY3500.01.02.01.00.006.H00	M8x340 Stud	2
7	MY3500.01.02.01.00.007.H00	VISE FIXING BOLT CLAMPING PIN	1
8	MY3500.01.02.01.00.008.H00	MOVABLE CLAMP PISTON CONNECTION PIPE	1
9	M12x50 SUSPENDED ARM	M12x50 SUSPENDED ARM	1
10	M8 NUT	M8 NUT	4
11	M10x45 ALLEN BOLT	M10x45 ALLEN BOLT	6
12	M12x30 ALLEN BOLT	M12x30 ALLEN BOLT	1
13	M5x25 ALLEN BOLT	M5x25 ALLEN BOLT	1
14	M12x35 ALLEN BOLT	M12x35 ALLEN BOLT	4



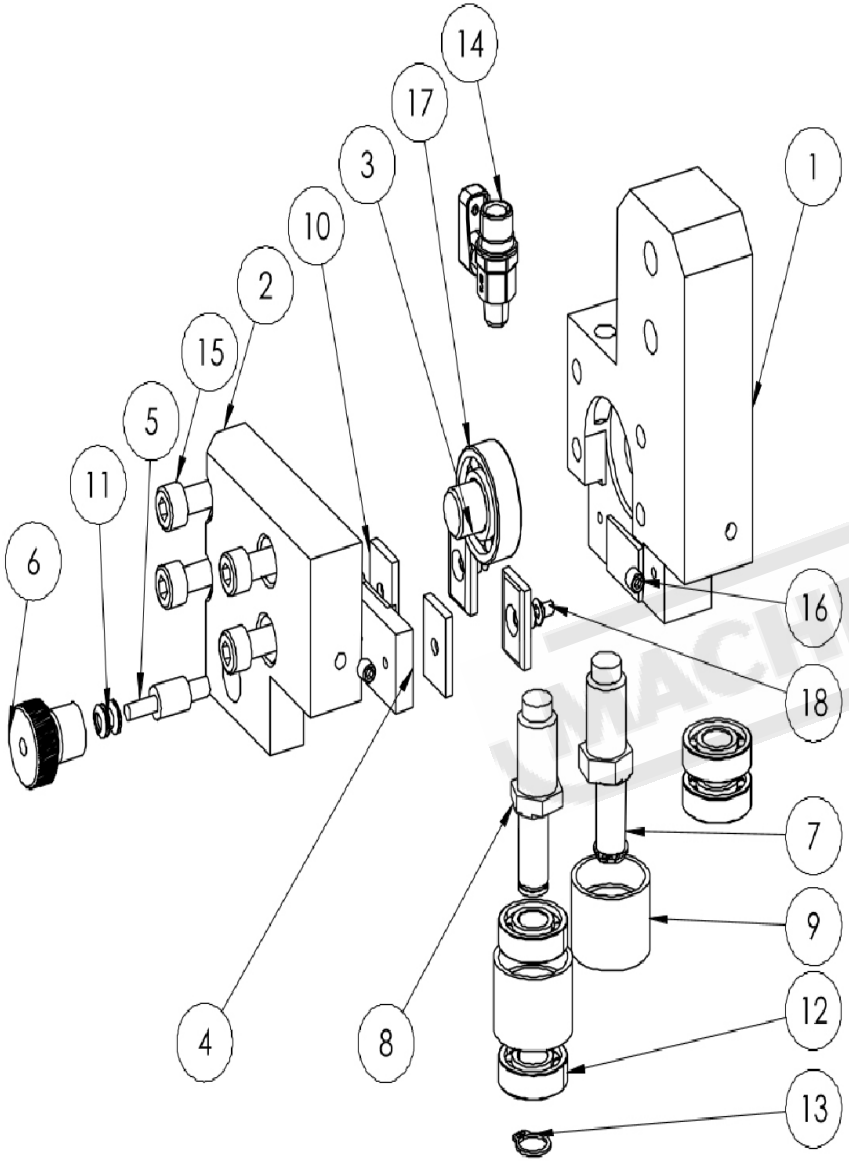
BMSY 440 DGH ROTARY ASSEMBLY 4			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.09.00.00.001.H00	ROTARY ASSEMBLY CNC MACHINING	1
2	MY3500.01.09.02.00.000.H00	ENCODER CONNECTION APPARATUS	1
3	MY3500.01.09.00.00.003.H00	CAMEL NECK HEAD SHAFT CONNECTION PIECE	2
4	MO3326.01.09.00.00.003.H00	CAMEL NECK SHAFT COVER	1
5	MY3500.01.09.00.00.005.H00	BALANCE PISTON SIDE CONNECTION BUSHING	2
6	MY3500.01.09.00.00.006.H00	CAMEL NECK INNER SHAFT	1
7	MY3500.01.09.00.00.007.H00	UPPER SWITCH ADJUSTMENT SHEET	1
8	MY3500.01.09.00.00.008.H00	SWITCH SHEET COVER	1
9	MY3500.01.09.01.00.000.H00	HEAD STABILIZER ASSEMBLY	1
10	MY3500.01.09.00.00.009.T00	ROTARY EVENING STAMP	1
11	O-RING Ø100x3	KASTAS KO-1000030	1
12	STANDARD	M5x20 ALLEN BOLT	4
13	M10x45 ALLEN BOLT	M10x45 ALLEN BOLT	4
14	M10x35 ALLEN BOLT	M10x35 ALLEN BOLT	2
15	M10x40 ALLEN BOLT	M10x40 ALLEN BOLT	2
16	32012 BEARING	32012X BEARING	2
17	KM 12 NUT	KM 12 NUT	2
18	O-RING Ø49x3	KASTAS KO-0490030	1
19	M8x30 SUSPENDED ARM	M8x30 SUSPENDED ARM	1
20	MY3500.01.09.00.00.011.H00	CABLE HOUSING (TAIL)	1
21	MY3500.01.09.00.00.012.H00	CABLE PROFILE TOP SHEET	1
22	DIN 912_M8 x 30 x 30 x 30_8-8	DIN 912_M8 x 30 x 30 x 30_8-8	2
23	NUT_ M8	NUT	2
24	DIN 7991_M5 x 8 x 8	DIN 7991_M5 x 8 x 8	4
25	DIN 912_M6 x 20 x 20_8-8	DIN 912_M6 x 20 x 20_8-8	2
26	MY3500.01.09.00.00.010.H00	LOCKING HOUSING	1



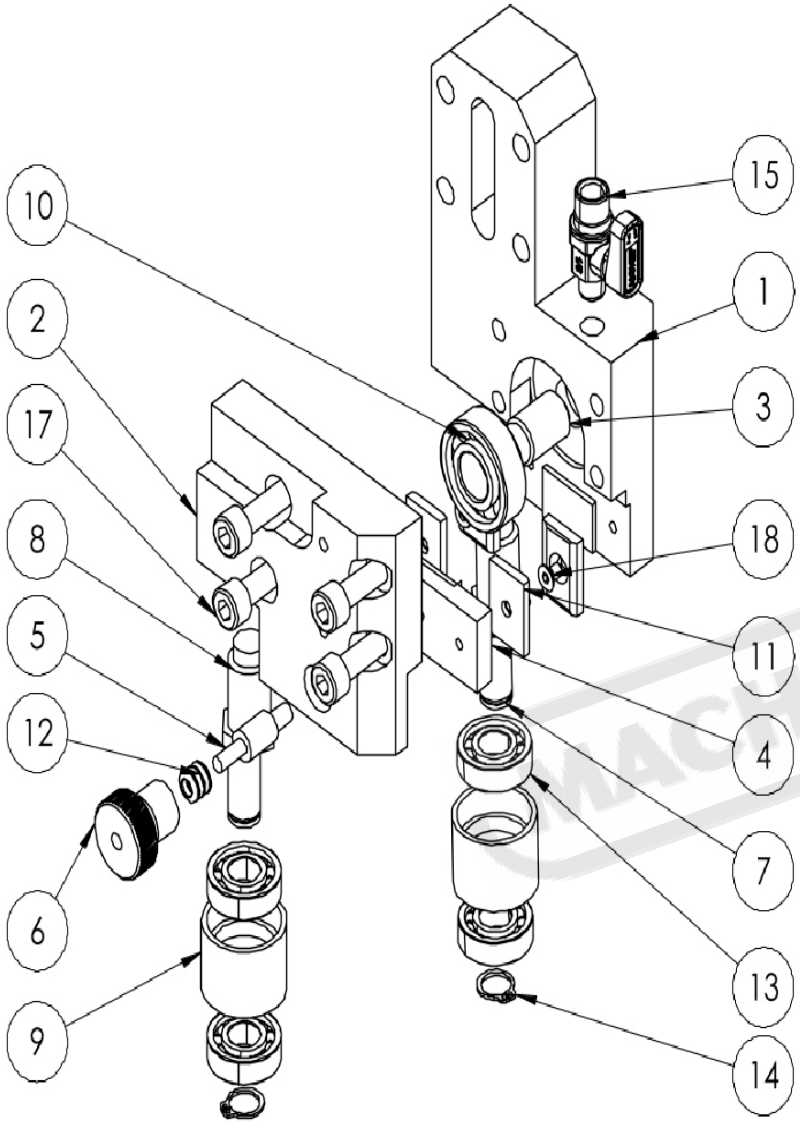
BMSY 440 DGH ANGLE LOCKING WEDGE 5			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.05.01.00.001.H00	ANGLE LOCKING WEDGE	1
2	MY3500.01.05.01.00.002.H00	LOCKING COVER	1
3	MY3500.01.05.01.00.004.H00	LOCKING INNER DRIVE SHAFT (WITH NUTRING)	2
4	MY3500.01.05.01.00.003.H00	ANGLE LOCK INNER PART (BRASS)	2
5	O-RING Ø46.04X3.53	KASTAS KO-0460435	1
6	M5x16 ALLEN BOLT	M5x16 ALLEN BOLT	6
7	K21-35X45X6 THROAT SEAL	KASTAS K21-035/7	2



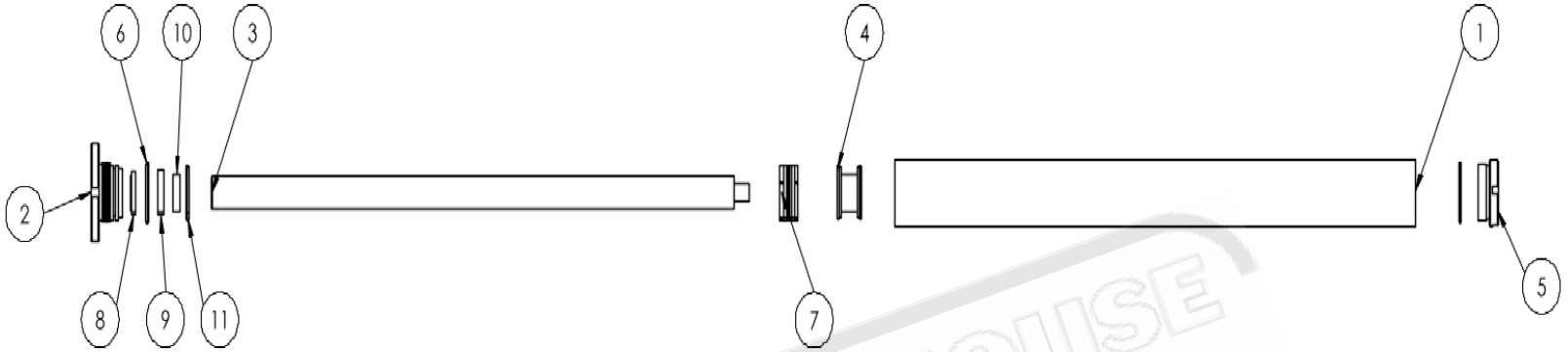
BMSY 440 DGH MOVABLE ARM GROUP 6			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.02.01.01.000.H00	MOVABLE DIAMOND WEDGE	1
2	MY3500.02.02.01.00.002.H00	COLUMN ARM CLAMPING PIECE	1
3	MY3500.02.02.01.00.004.H00	DIAMOND SLEEVE STRIP CASING SHEET	1
4	MY3500.02.02.01.02.000.H00	FIXED ARM HOUSING ASSEMBLY	1
5	MY3500.02.02.01.00.003.H00	MOVABLE ARM TRAVEL WEDGE	1
6	HSR25 R 1 SS	HSR25 R 1 SS	1
7	M8 Ø24x13x2.5 BULL	M8 Ø24x13x2.5 BULL	2
8	M12x55 ALLEN BOLT	M12x55 ALLEN BOLT	2
9	M12 NUT	M10 NUT	1
10	STANDARD	M12 x 45 hexagonal bolt	1
11	M12x20 SETSKUR BOLT	M12x20 SETSKUR BOLT	4
12	BMSO 320S STANDARD	M6x20 ALLEN BOLT	4
13	M6 x 10 SHEVE HEAD BOLT	M6 x 10 SHEVE HEAD BOLT	2
14	M6x10 BOMB HEAD BOLT	M6x10 BOMB HEAD BOLT	3
15	MY3500.02.02.01.00.005.H00	DIAMOND WEDGE MOVABLE ARM CNC	1



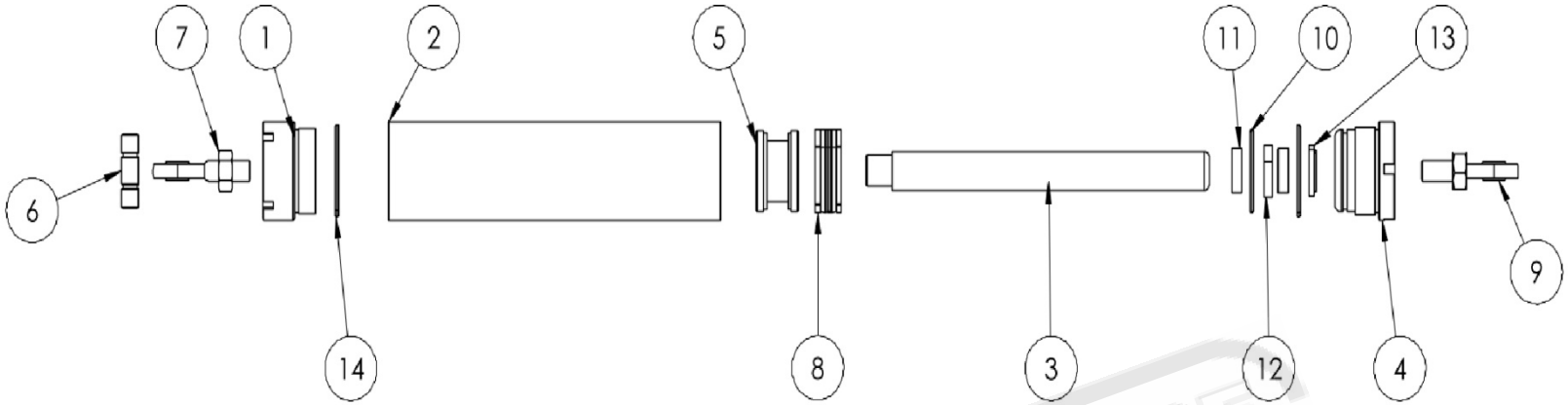
BMSY 440 DGH MOVING DIAMOND WEDGE ASSEMBLY 7			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.02.01.01.001.H00	MOVABLE DIAMOND WEDGE BOTTOM	1
2	MY3500.02.02.01.01.002.H00	MOVABLE DIAMOND WEDGE UST	1
3	MY3500.02.02.02.01.003.H00	DIAMOND WEDGE BEARING RETAINER PIN	1
4	MY3500.02.02.02.01.004.H00	DIAMOND BONDING WEDGE	1
5	MY3500.02.02.02.01.005.H00	DIAMOND WEDGE WASHER BEARING SHAFT	1
6	MY3500.02.02.02.01.006.H00	DIAMOND CLAMPING WEDGE	1
7	MY3500.02.02.02.01.007.H00	DIAMOND WEDGE ECCENTRIC SHAFT	1
8	MY3500.02.02.02.01.008.H00	DIAMOND WEDGE ECCENTRIC SHAFT SHORT	1
9	MY3500.02.02.02.01.009.H00	DIAMOND WEDGE ALIGNMENT SLEEVE	2
10	25.2x18x4 DIAMOND	25.2x18x4 DIAMOND	4
11	10x5.5x0.5 Dish Stamp	10x5.5x0.5 Dish Stamp	6
12	6001 BEARING	6001 BEARING	4
13	AØ12x1 TAB	Ø12x1 TAB	2
14	AIGNEP 0631000001 DN6 VALVE 1/8 DIS	AIGNEP 0631000001 DN6 VALVE 1/8 DIS	1
15	M8x35 ALLEN BOLT	M8x35 ALLEN BOLT	4
16	M6x6 SETSKUR BOLT	M6x6 SETSKUR BOLT	2
17	6202 BEARING	DIN 625 - 6202 - Full,DE,NC,Full_68	1
18	M4x7 HAVSA HEAD BOLT	M4x7 HAVSA HEAD BOLT	4



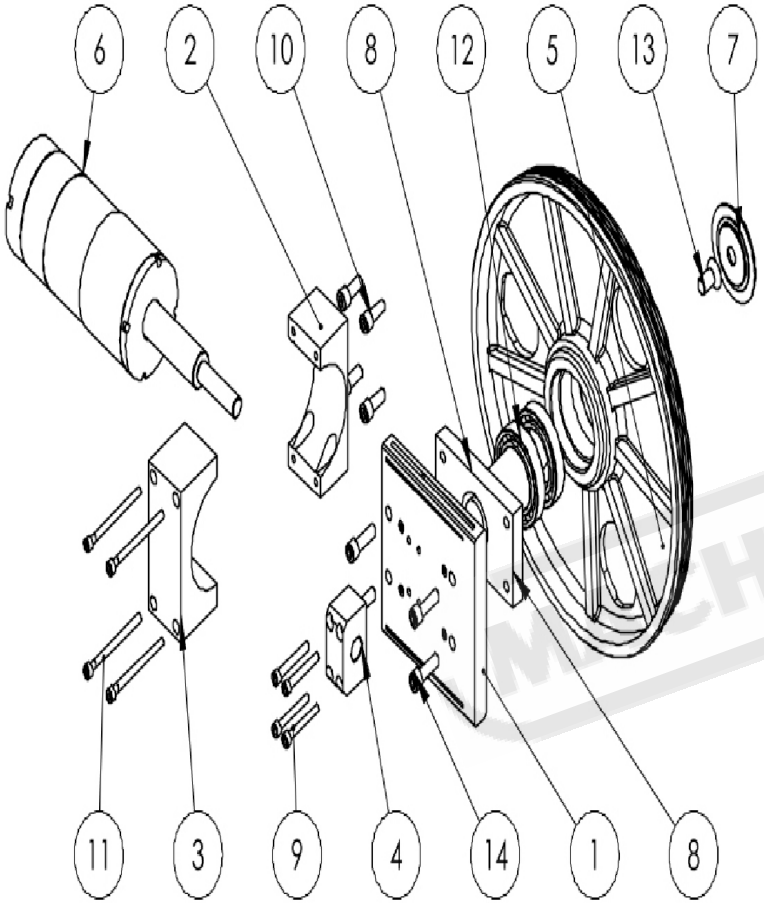
BMSY 440 DGH FIXED DIAMOND WEDGE MOUNT 8			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.02.02.01.001.H00	FIXED DIAMOND WEDGE BOTTOM	1
2	MY3500.02.02.02.01.002.H00	FIXED DIAMOND WEDGE TOP	1
3	MY3500.02.02.02.01.003.H00	DIAMOND WEDGE BEARING RETAINER PIN	1
4	MY3500.02.02.02.01.004.H00	DIAMOND BONDING WEDGE	1
5	MY3500.02.02.02.01.005.H00	DIAMOND WEDGE WASHER BEARING SHAFT	1
6	MY3500.02.02.02.01.006.H00	DIAMOND CLAMPING WEDGE	1
7	MY3500.02.02.02.01.007.H00	DIAMOND WEDGE ECCENTRIC SHAFT	1
8	MY3500.02.02.02.01.008.H00	DIAMOND WEDGE ECCENTRIC SHAFT SHORT	1
9	MY3500.02.02.02.01.009.H00	DIAMOND WEDGE ALIGNMENT SLEEVE	2
10	6202 BEARING	DIN 625 - 6202 - Full,DE,NC,Full_68	1
11	25.2x18x4 DIAMOND	25.2x18x4 DIAMOND	4
12	10x5.5x0.5 VIBRANT STAMP	10x5.5x0.5 Dish Stamp	6
13	6001 BEARING	6001 BEARING	4
14	AØ12x1 TAB	Ø12x1 TAB	2
15	AIGNEP 0631000001 DN6 VALVE 1/8 DIS	AIGNEP 0631000001 DN6 VALVE 1/8 DIS	1
16	M6x6 SETSKUR BOLT	M6x6 SETSKUR BOLT	2
17	M8x35 ALLEN BOLT	M8x35 ALLEN BOLT	4
18	M4x7 HAVSA HEAD BOLT	M4x7 HAVSA HEAD BOLT	4



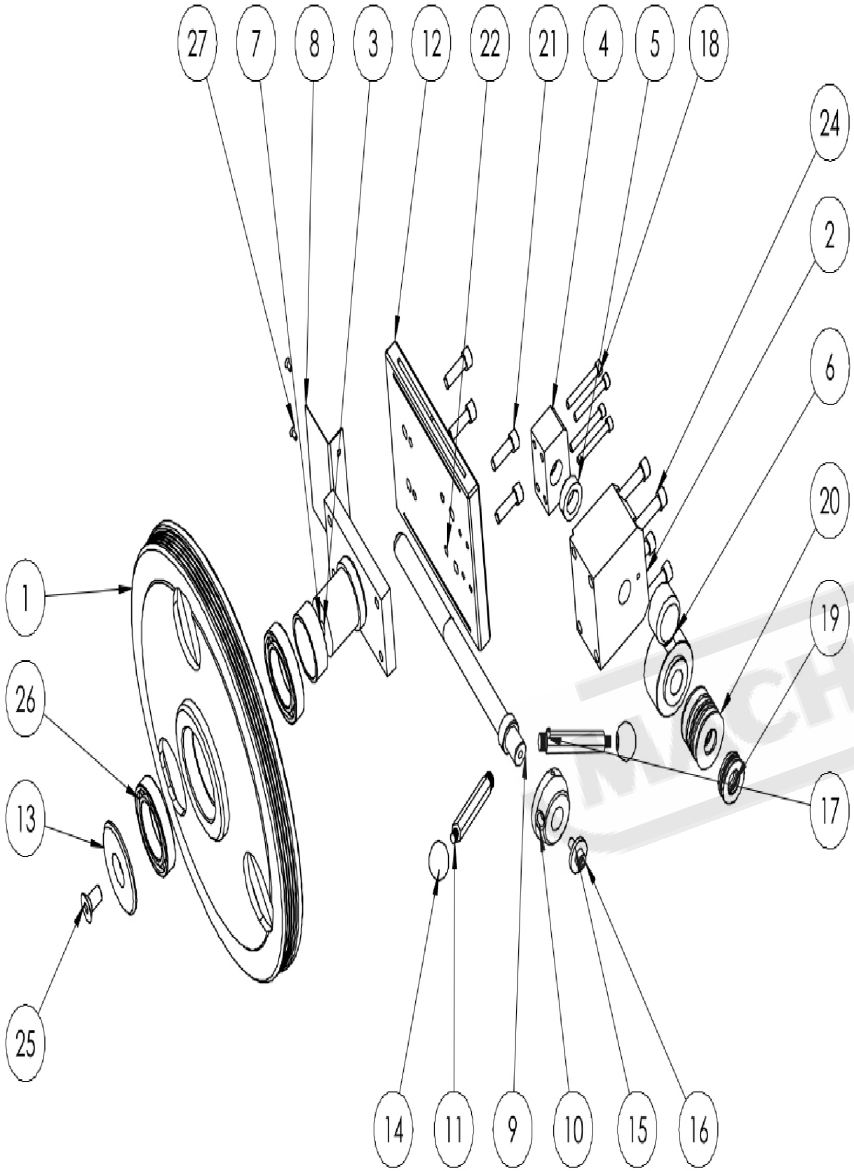
BMSY 440 DGH FIXED VISE PISTON 9			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.02.01.01.001.H00	MOVABLE CLAMP PISTON TUBE	1
2	MY3500.01.02.01.01.007.H00	MOVABLE VISE PISTON FRONT COVER	1
3	MY3500.01.02.01.01.006.H00	MOVABLE VISE PISTON SHAFT	1
4	MO3326.01.02.03.00.005.H00	VISE HYDRAULIC LIFTING PISTON ROD HEAD	1
5	MY3500.01.02.01.01.002.H00	VISE PROGRESSION PISTON BACK COVER	1
6	O-RING Ø49x3	KASTAS KO-0490030	2
7	K18-50X34X20_5X46X3_1	KASTAS K18 050-034	1
8	CONSUMABLES	K06 30X38X7	1
9	XT200 30X40X8 OIL SEAL	KASTAS XT200-030/1	1
10	CONSUMABLES	Ø34X10X2 TEFLON TAPE	1
11	O-RING Ø42.86x3_53	KASTAS KO-0428635	1



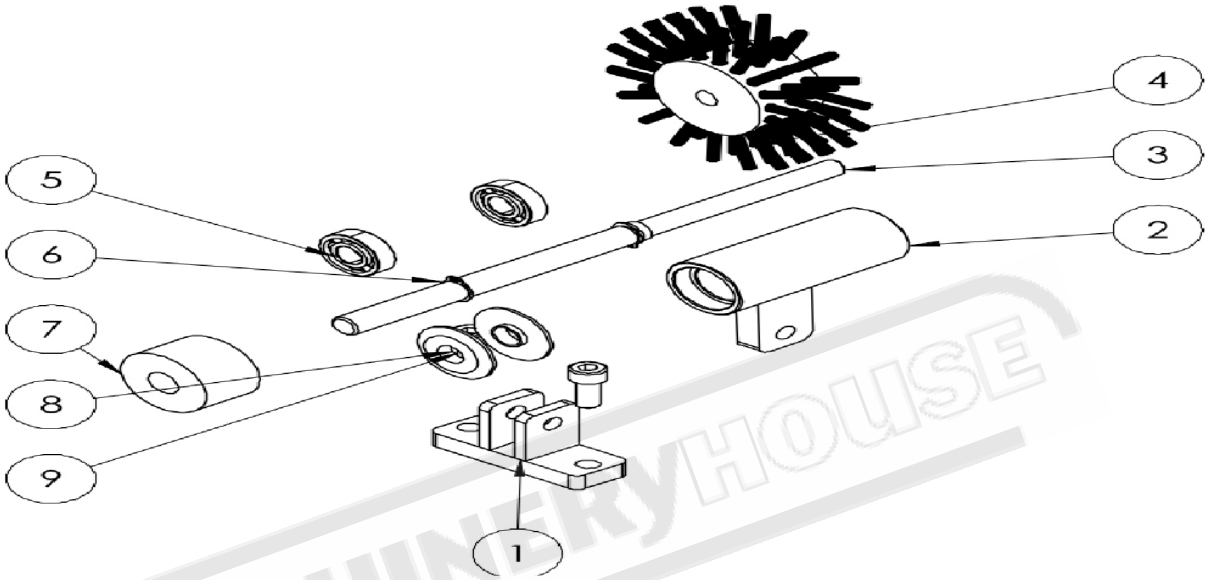
BMSY 440 DGH LIFTING PIN 10			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.03.00.00.001.H00	PISTON BOTTOM COVER	1
2	MY3500.01.03.00.00.002.H00	HYDRAULIC LIFT PISTON PIPE WELDING	1
3	MY3500.01.03.00.00.003.H00	LIFTING PISTON SHAFT	1
4	MY3500.01.03.00.00.004.H00	LIFTING PISTON TOP COVER	1
5	MY3500.01.03.00.00.005.H00	DRIVER PROGRESS PER MILE	1
6	MY3500.01.03.00.00.006.H00	LIFTING PIN PIN	1
7	M16 NUT B13	M16 NUT	2
8	K518-63X47X20_5X59X3_1	COMPACT SEAL	1
9	M16 PISTON CONNECTION ARTICULATED	M16 PISTON CONNECTION ARTICULATED	2
10	O-RING Ø58x3	KASTAS KO-0580030	1
11	CONSUMABLES	Ø34X10X2 TEFLON TAPE	2
12	XT200 30X40X8	KASTAS XT200-030/1	1
13	CONSUMABLES	K06 30X38X7	1
14	O-RING Ø62x3	O-RING Ø62x3	2



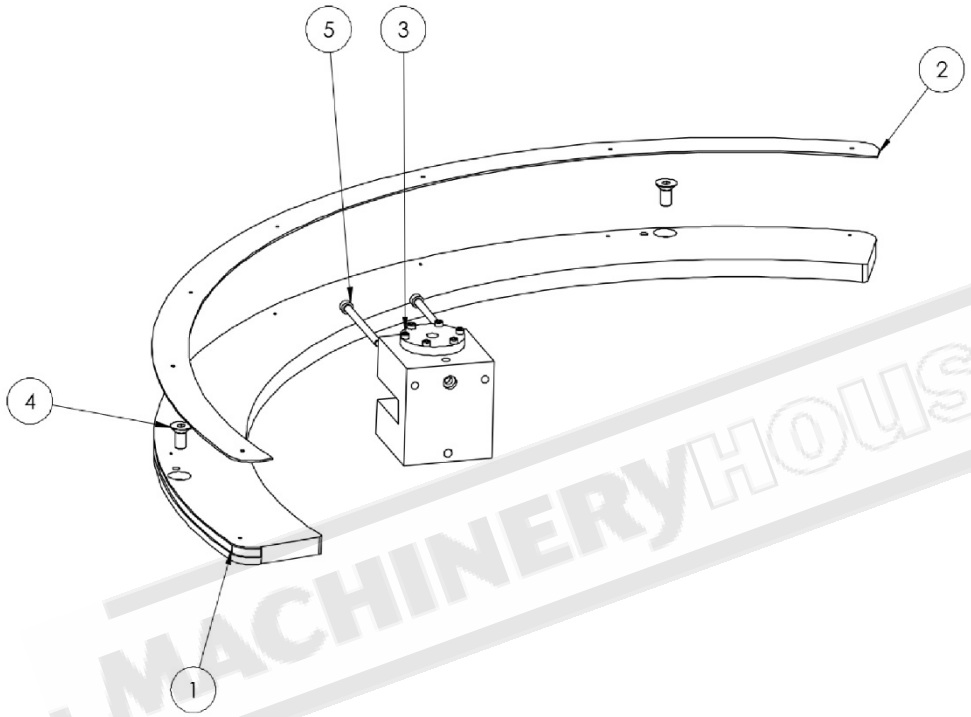
BMSY 440 DGH HYDRAULIC TENSIONER 11			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.04.00.00.001.H00	STRETCHING CRADLE	1
2	MY3500.02.04.00.00.003.H00	HYDRAULIC TENSIONING WEDGE TOP	1
3	MY3500.02.04.00.00.004.H00	HYDRAULIC TENSIONING WEDGE BOTTOM	1
4	MY3500.02.04.00.00.005.H00	HYDRAULIC TENSION NUT	1
5	MY3500.02.03.00.00.001.H00	FRONT HOUSING	1
6	MY3500.02.04.01.00.000.H00	HYDRAULIC CLAMPING PISTON ASSEMBLY	1
7	MY3500.02.03.00.00.007.H00	TENSION PULLEY CONNECTION WASHER	1
8	MY3500.02.03.00.00.003.H00	PULLEY TENSIONING DEVICE	1
9	M8x65 ALLEN BOLT	M8x65 ALLEN BOLT	4
10	M12x30 ALLEN BOLT	M12x30 ALLEN BOLT	4
11	M8x110 ALLEN BOLT	M8x110 ALLEN BOLT	4
12	6012 BEARING	6013 BEARING	2
13	M16x30 SHEVE HEAD BOLT	M16x30 SHEVE HEAD BOLT	1
14	M12x40 ALLEN BOLT	M12x40 ALLEN BOLT	4
15	M12x25 SETSKUR BOLT	M12x25 SETSKUR BOLT	4



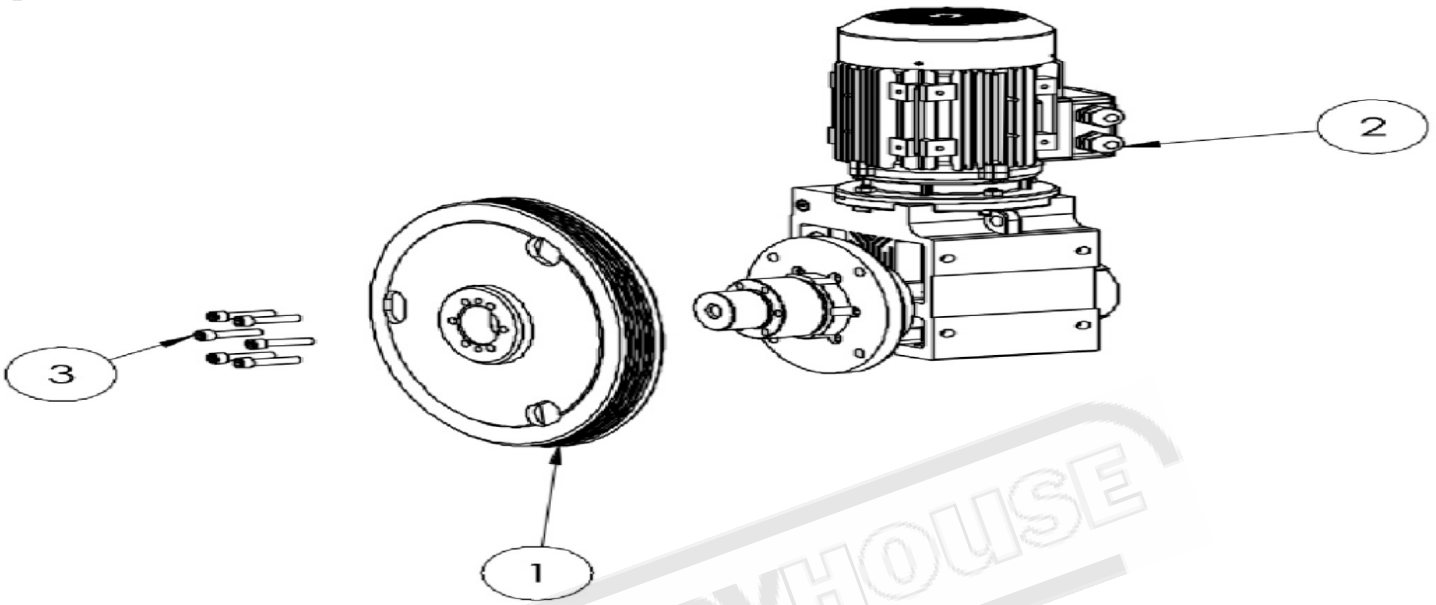
BMSY 440 DGH MECHANICAL STRETCHING 12			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.03.00.00.001.H00	FRONT HOUSING	1
2	MY3500.02.03.00.00.002.H00	TENSION CONNECTION WEDGE	1
3	MY3500.02.03.00.00.003.H00	PULLEY TENSIONING DEVICE	1
4	MY3500.02.03.00.00.005.H00	MECHANICAL TENSION NUT ASSEMBLY	1
5	MY3500.02.03.00.00.006.H00	TENSION ADJUSTMENT BRACELET	1
6	MY3500.02.03.02.00.000.H00	TENSIONING MONOMETER ASSEMBLY	1
7	MY3500.02.03.00.00.008.H00	TENSION BEARING SUPPORT BUSHING	1
8	MY3500.02.03.00.00.009.H00	TENSIONING GUARD SHEET	1
9	MY3500.02.03.00.00.010.H00	TENSION SHAFT	1
10	MY3500.02.03.00.00.011.H00	TENSIONING MECHANICAL SHAFT WEDGE	1
11	MO3326.02.03.00.00.011.H00	MECHANICAL TENSION ARM STUD	2
12	MY3500.02.03.00.00.004.H00	STRETCHING CRADLE	1
13	MY3500.02.03.00.00.007.H00	TENSION PULLEY CONNECTION WASHER	1
14	Ø35 x M10 KNOB	Ø35 x M10 KNOB	2
15	Ø35x10.5x5 BULL	Ø35x10.5x5 BULL	1
16	CONSUMABLES	M10x25 ALLEN BOLT	1
17	M6x8 SETSKUR BOLT	M6x8 SETSKUR BOLT	2
18	M8x65 ALLEN BOLT	M8x65 ALLEN BOLT	4
19	51205 BEARING	51205 BEARING	1
20	60x26x3 DISH BEAD	60x26x3 DISH BEAD	6
21	M12x40 ALLEN BOLT	M12x40 ALLEN BOLT	4
22	M12x25 SETSKUR BOLT	M12x25 SETSKUR BOLT	4
23	CONSUMABLES	DIN71412 M8x1_9ER_6KT	2
24	M12x90 ALLEN BOLT	M12x90 ALLEN BOLT	4
25	M16x30 SHEVE HEAD BOLT	M16x30 SHEVE HEAD BOLT	1
26	6012 BEARING	6012 BEARING	2
27	DIN 7991_M5 x 12 x 12	DIN 7991_M5 x 12 x 12	2



BMSY 440 DGH CHIP BRUSH 13			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.06.00.00.001.H00	CHIP BRUSH WEDGE WELDED ASSEMBLY	1
2	MY3500.02.06.00.00.002.H00	CHIP BRUSH BODY	1
3	MY3500.02.06.00.00.003.H00	Ø12x230 SWASH BRUSH SHAFT SHAFT	1
4	CONSUMABLES	Ø100x30 BRUSH	1
5	6001 BEARING	6001 BEARING	2
6	AØ12x1 TAB	Ø12x1 TAB	2
7	Ø40x14x25 VULKALON WHEEL	Ø40x14x25 VULKALON WHEEL	1
8	Ø35x12x6 BULL	Ø35x12x6 BULL	2
9	DIN 912_M8 x 20 x 20 x 20_8-8	DIN 912_M8 x 20 x 20 x 20_8-8	2



BMSY 440 DGH ANGLE LOCKING GROUP 14			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.01.05.00.00.001.H00	ANGLE LOCKING SLIDE	1
2	MY3500.01.05.00.00.006.T00	ANGLE LOCKING SHEET	1
3	MY3500.01.05.01.00.000.H00	LOCKING WEDGE ASSEMBLY	1
4	DIN 7991_M12 x 25 x 25	DIN 7991_M12 x 25 x 25	2
5	DIN 912_M8 x 110 x 28_8-8	DIN 912_M8 x 110 x 28_8-8	2



BMSY 440 DGH REDUCER GROUP 15			
P.N.	**PART CODE**	**PART DESCRIPTION**	**QUANTITY**
1	MY3500.02.05.00.00.001.H00	REAR HOUSING	1
2	KR373.X2R-100L4C	KR373.X2R-100L4C YILMAZ GEARBOX	1
3	M12x50 ALLEN BOLT	M12x50 ALLEN BOLT	6